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Australia's Magazine of Industrial & Narrow Gauge Railways



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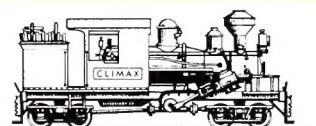
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Imperial to metric conversions:

1 inch (in)	25.40 millimetres
1 foot (ft)	0.30 metre
1 yard (yd)	0.91 metre
1 chain	20.11 metres
1 mile	1.60 kilometres
1 ton	1.01 tonnes
1 pound (lb)	0.454 kilogram
1 acre	0.4 hectare
1 horsepower (hp)	746 Watts
1 gallon	4.536 litres
1 cubic yard	0.765 cubic metres
1 super foot (sawn timber)	0.00236 cubic metre



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No 267 June 2019

Contents

Plateways around Melbourne	3
The Duranbah CSR Tramway	17
Industrial Railway News	24
Letters	28
Book Review	31
Field Reports	32
Heritage & Tourist News	35
Looking back	39

Editorial

The publication of high quality historical photos to illustrate the articles in *Light Railways* has always been a priority for the magazine. It is not always possible to get photos of sufficient resolution that suit the articles we publish, but there are various sources available, including the various State Libraries, sometimes Trove, FlickrR and other forums. It is very fortunate therefore, that the family of the well respected rail historian the late Weston Langford has made his collection available on line. The collection includes a large number that will be of interest to readers. In this edition we feature several from his collection from Mt Lyell and Western Australia in the early 1960s. I plan to publish more of the collection in future editions of the magazine. Full details and lots more photos can be viewed at the website www.westonlangford.com.

The main feature in this edition is Part 2 of Phil Rickard's excellent research into the use of Plateways in early Melbourne. This is followed by another instalment on the sugar tramways from the northern NSW districts around Condong by Peter Cokley. We also have the usual features covering Field Reports, Industrial Railway News and Heritage and Tourist News.

I hope you enjoy this edition.

Richard Warwick

Front Cover: *Abt locomotive No 2 with a down goods rake of trucks with ore from the mines at Mount Lyell at Teepookana just before closure of the line. The photo was taken on 30 January 1963 by Weston Langford. www.westonlangford.com/images/photo/102558*

The Light Railway Research Society of Australia Inc. was formed in 1961 and caters for those interested in all facets of industrial, private, tourist and narrow gauge railways in this country and its offshore territories, past and present.

Members are actively involved in researching light railways in libraries and archives, interviewing knowledgeable first-hand participants and undertaking field work at industrial sites and in forests.

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Articles, letters and photographs of historical and current interest are welcome. Contributions should be



Dynon Road, West Melbourne c.1930. Just prior to the Great War, Dynon Road received two plateways, one on each side of the road. This is the south-side plateway, looking westwards. A one-horse tip dray with a curious driver is about to pass under the recently completed bridge carrying the goods-only railway lines from South Kensington to West Footscray. In the middle distance, before the road starts uphill, it crosses the Maribyrnong River. West of the bridge Dynon Road becomes Hopkins Street and climbs the hill into Footscray. In front of the tip-dray, also taking advantage of the plateway, is a two-horse wagon with a heavy load. This is the only close-up image so far located showing a plateway in use.

Photo: Public Record Office, Victoria, VPRS 12800/P3 item ADV 0176DV 0176

Plateways around Melbourne

Part 2 – Sand, Swamp, Clay and Quarry

by Phil Rickard

(Part One of this article appeared in *Light Railways* No. 258 December 2017. It covered the first broad-treaded roadside plateway in Melbourne – along Royal Parade in Parkville in 1880 – plus the extensive system on the ‘Sand Belt’, centred on Point Nepean Road to the south-east of the City.)

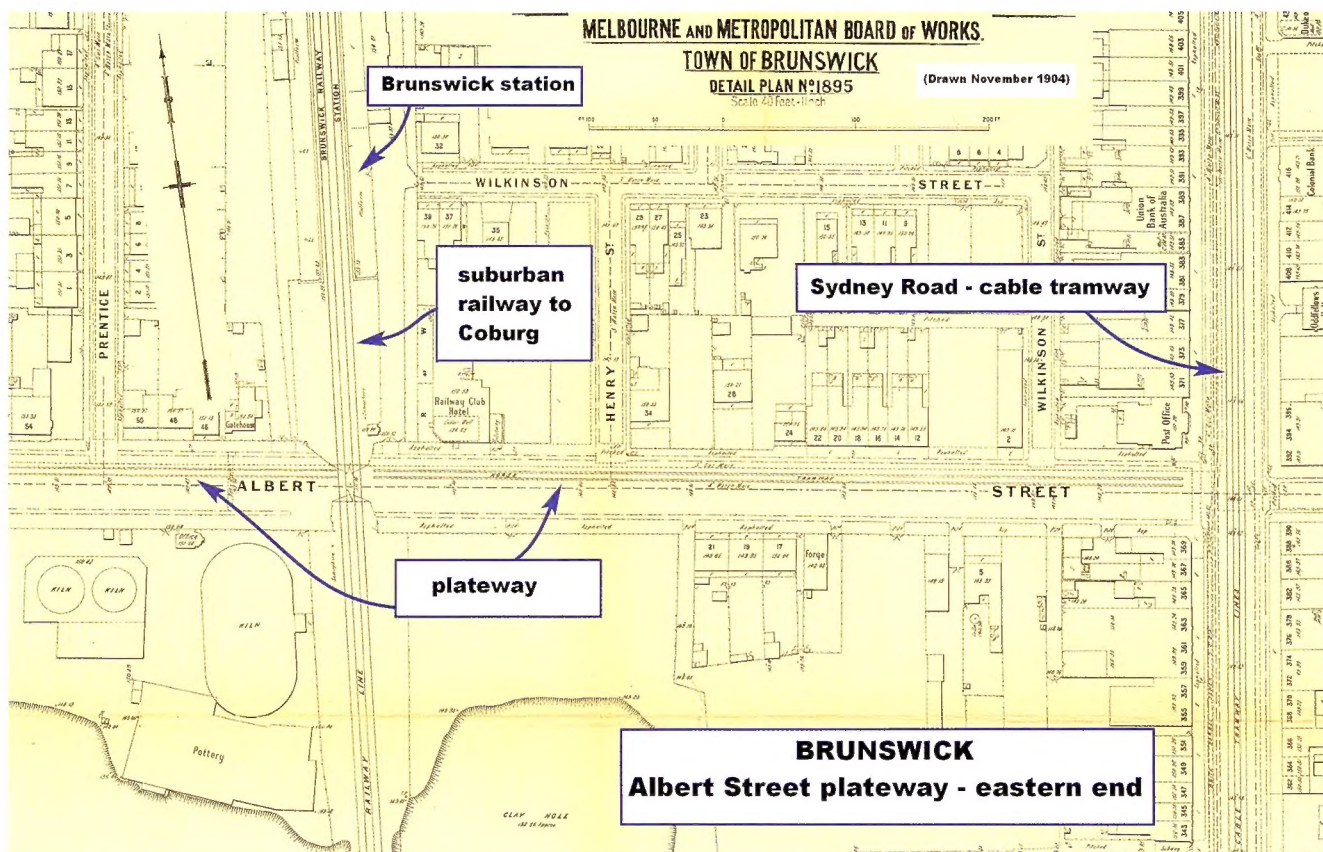
Brunswick – Potteries and Brickworks

From Melbourne’s early gold-rush years the abundant clay deposits of Brunswick, about five kilometres north of the city, were exploited for the making of bricks, tiles and all manner of pottery. Initially, however, the quality of the products varied greatly, from poor to excellent and it was not until after 1870, when the first Hoffman kiln was erected, by the Hoffman Patent Steam Brick Company, that the output became uniform and of good quality.¹ The erection of Hoffman kilns also resulted in a big increase in the quantity of bricks produced, which coincided with the expansion of Melbourne and resultant demand for bricks and pottery products. The transport of these huge quantities of bricks quickly had deleterious effects on Brunswick’s roads and it was not long before the Brunswick Borough Council was looking to emulate the Melbourne City Council’s plateway on Sydney Road (Royal Parade), Parkville, installed in 1880. During 1885, aware of the damage being done to the streets adjacent to the various brickworks, the council instructed its surveyor to prepare plans and specifications for a ‘steel tramway’ (plateway) along Albert Street, from the Hoffman Brick Company’s works to the Sydney Road, South Brunswick plus a similar line along nearby Union Street.²

In mid-1886, to pay for the two tracks plus various other works, the Brunswick council raised a municipal loan in London for £28,000 – the portion allocated for Albert Street’s plateway was £1300, that for Union Street being £1060.³ In October 1886, with finance assured, council called tenders for 95 tons of tram plates, sufficient for both streets.⁴ Once the plates had arrived from England tenders were called for the actual construction and in May 1887, the contract to build both tracks was won by the well-known Melbourne contractors⁵ Messrs Graham and Wadick – £960 14s 1d for Albert Street and £949 4s 3d for Union Street.⁶ A month later some on council started to get ‘cold feet’ and suggested that the Union Street line was not required – an idea that was quickly quashed by Abraham Collings, the manager of the Hoffman Brick Company. In a letter to *The Age* Collings advised that as the plateway was on the loan schedule it must be carried out and that they would be using the Union Street plateway for traffic from their No.2 works.⁷

In 1906 the Hindmarsh Town Council (South Australia) enquired of the Brunswick council the costs of laying its steel plateways as they were interested in laying similar on the Port Road in Adelaide. Brunswick’s reply gives us a detailed costing for about one mile of track:

			£	s	d
Steel Plates	95 tons	£8 14s 9d per ton	830	01	3
Redgum Sleepers	10in x 6in		771	12	1
Bluestone Pitching	2336¼ yards	7s per yard	782	13	9
Steel Slide-plates	3476 pounds	6d per pound (lb)	86	18	0
Jagged Bolts	9in x ½ in	6d per lb	104	02	0
Spikes	4in x 24in [sic]	6d per lb	2	03	0
Screenings	71 cu. yds	9s per cubic yd	30	19	0
Metal (old)	500 cu. yds	2s per cubic yd	50	00	0
Spikes for slide plates	4in x ¼in	6d per lb	2	4	0
Spikes for flange plates	4½in x ½in	6d per lb	26	2	0
Cartage			4	0	0
Maintenance			8	0	0
Excavations			41	4	6
Extras			102	2	5
Total Cost			£ 2842	2	0



Brunswick further advised that the tracks had been in constant use for a period of 19 years and the maintenance costs since 1889 had not averaged more than £10 per annum.⁸

The listing above raises some queries including: What were 'Slide Plates' and what function did they serve? One suggestion is that they were widened plates, shaped like a flattened funnel, that directed a wagon's wheels onto the channel plates at each end of, and at various points along, the track. The cost of the 'Redgum Sleepers' indicates that it includes both the normal cross sleepers and the longitudinals – hence the dimensions – ten inches being the minimum width required under the plates. The amount spent on spikes for the plates – £26 2s – equates to about 4000 spikes; the length of track constructed probably required about 3200 spikes, the surplus would be used for ongoing maintenance. The two Brunswick tracks, each just under half-a-mile in length, were laid with plates believed to be eleven inches wide, $\frac{5}{8}$ -inch thick, ribbed on the face, and turned up half-an-inch at the sides, forming a shallow channel for waggon wheels to follow. The normal practise was to affix the plates onto Red Gum longitudinal timbers with spikes or screws, the timbers in turn being recessed an inch or so into cross sleepers, the whole being laid in a bed of road metal or similar.

The horse path between the tracks was then either asphalted, pitched (cobble) or surfaced with smaller metal. Both the Albert Street and Union Street tracks were intersected by the Victorian Railways' existing suburban line to Coburg. To avoid an actual fabricated level crossing, the steel plates were stopped short of the rails on each side of the crossing – the actual level crossing being fully pitched. It is not known when the Brunswick plateways were removed though in 1906 council authorised the lifting of the tram plates in Union Street, from the railway crossing to Sydney Road.⁹ They were to be re-laid in Kirkdale Street, a short thoroughfare leading to Wales' stone quarry near the Merri Creek. Whether this work was done or not is uncertain. The Albert Street line was still there in 1910 as the council's surveyor was authorised to inspect and report on its condition.

Coburg – Bridge Street and Newland's Road

In Coburg¹⁰, 8km north of Melbourne, the quarrying of 'bluestone' (the local name for an extremely hard basalt), commenced in the 1850s. Its many uses included road metal, cubed cobblestones and dimension building stone. Within twenty years there were many quarries in the north-eastern parts of the Coburg shire, exploiting the bluestone deposits between the Merri Merri Creek and Edgar's Creek; indeed by 1890 some 28 quarries were in the area.¹¹ The local access roads, Newland's Road and Bridge Street, suffered greatly from the stone carters' wagons. In February 1882 there was a plan to put a stone tramway (stoneway) across Dunstan's bridge* which carried Newland's Road over the Merri Creek. Tenders were called by the shire council but whether the work was done is unknown.¹² In common with many councils on the then-fringes of Melbourne, the Shire of Coburg was always in a poor financial state and considerably in arrears in regards infrastructure.

In late 1884, to try and address this, the Coburg shire raised a £6500 loan for municipal works – included was £500 for an 'iron tramway' along the south side of Bridge Street, from Dunstan's bridge to Champ Street, a distance of a quarter-mile.¹³ (Bridge Street later became Gaffney's Road; today it is Murray Road) In February 1885, council called tenders for '2640 lineal feet' of tramway plates – both iron and steel.¹⁴ Iron plates were quoted at £10 per ton and steel plates at £10 7s 6d per ton – the steel option being accepted.¹⁵ Upon arrival of the plates, tenders for the actual plate laying were called and in July 1885 duly awarded to local contractor, William Stapleton.¹⁶ Although council had to allow an extension of time on the contract, it seems to have been successfully completed. Within a short time, it was being extolled by land owners along

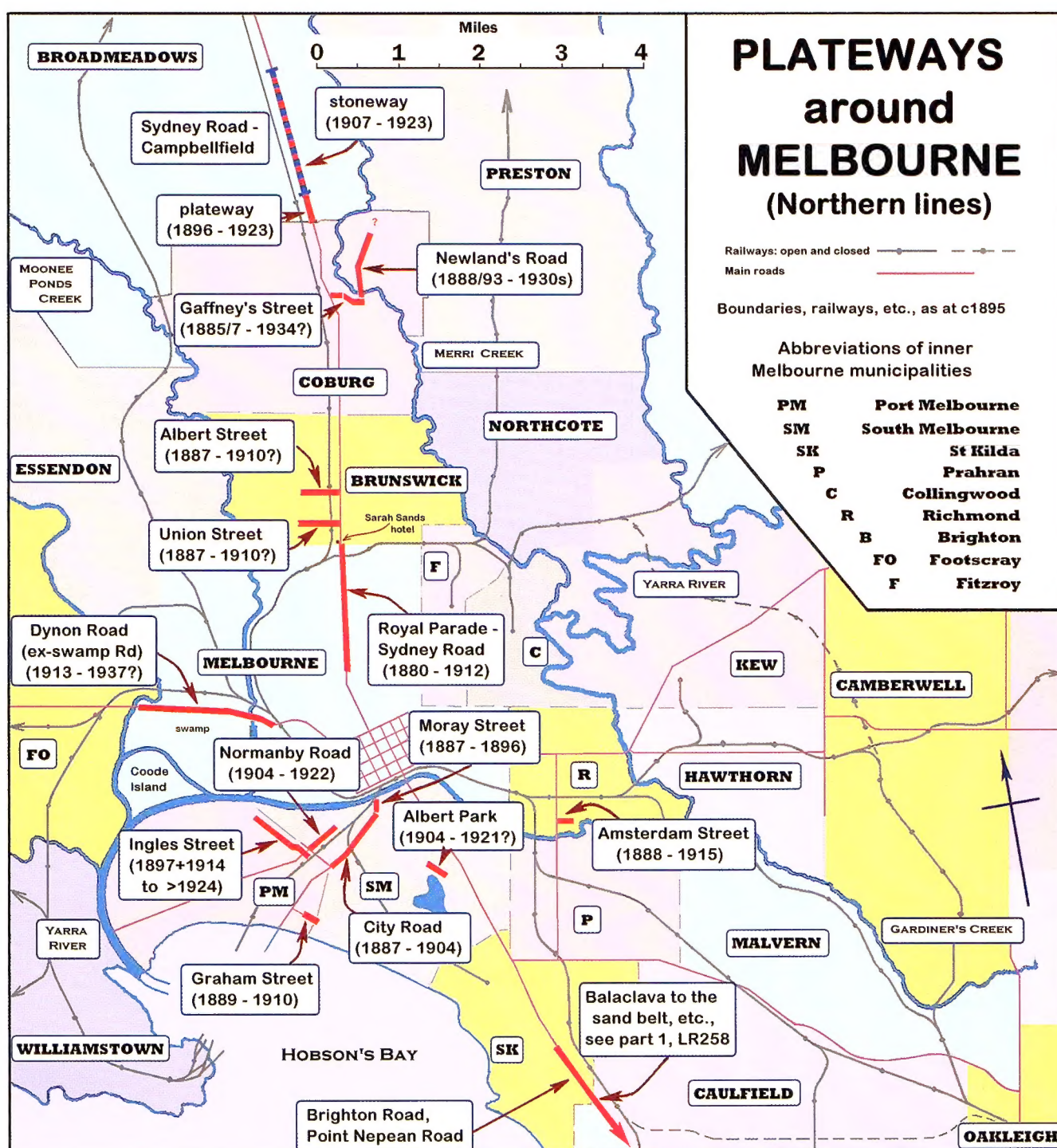
* Dunstan's Bridge, otherwise known as Newland's Bridge, is a bluestone bridge built by the Penal Department in 1865. It has three 30ft spans and is today used only for foot and bicycle traffic. In the 1880s a Mr Dunstan owned a nearby property (Victorian Heritage Register H1446)

Newland's Road, as shown in this advertisement for 40 acres of 'quarry land', containing '30 acres of bluestone of the best quality': *The approach to the block has been rendered exceptionally easy by their being laid an iron tramway for heavy traffic.*¹⁷ At that time the plateway didn't extend along Newland's Road itself, but that was soon to change.

In February 1887 council called for tenders for 'about 160 tram channel plates, 9ft'¹⁸ – around 240 yards of actual plateway. In November 1888 further tenders were called for some 40 tons of plates – about 650 yards. The tender was won by James McEwan & Co¹⁹ however it is not certain that these plates were supplied. One local source states that council rescinded their decision however that course would have embroiled council in lengthy legal proceedings.²⁰ In between these two purchases the shire floated its second municipal loan which included £1000 for a plateway along 'Newland's Road west'²¹ – the stretch of

that road immediately north of Dunstan's bridge. At that time plateways were costing up to £2000 per mile (depending on the state of the existing road formation) so the amount borrowed and plates purchased seem correct. Despite this I suspect that the 1887 purchase was used to extend the Bridge Street track westwards, from Champ Street to Sydney Road, a distance of about 240 yards – MMBW plans confirm a plateway was built along this section. The 1888 purchase was almost certainly used in accordance with the loan schedule, on Newland's Road.

Three years later, in November 1891, with the plateways proving their worth in reducing road maintenance costs, a third loan was floated which included £2010 for 'forming, metalling and steel tramway' in Newland's Road²² – presumably a continuation of the existing track. Tenders were called in December but due to the limited time allowed none were received.²³ Re-advertised in February 1892, two firms responded



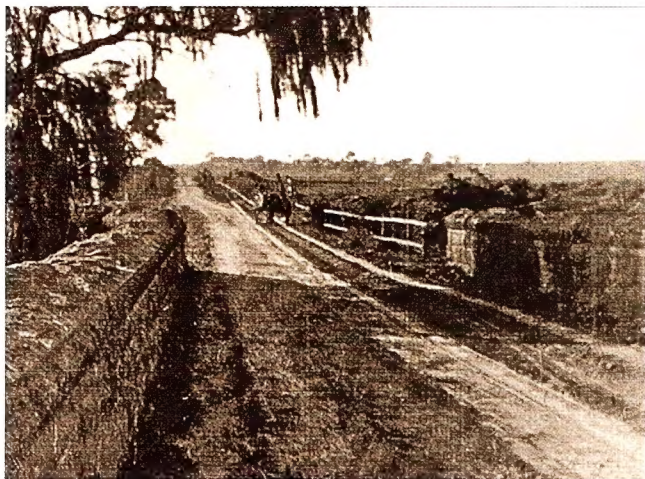
– James McEwan & Co and Briscoe & Co. The latter was awarded the tender at £460 for forty tons of plates – enough for about 650 yards of track.²⁴

The plates arrived from England at the start of October and within weeks the road formation and platelaying tender was awarded to local contractor Laurence McLaughlan for £1008 3s 4d.²⁵ The track, on the eastern side of the road, is believed to have been finished in early 1893 though it may have been extended a few chains later that year when it was found that £43 11s was still available from the loan and a small quantity of tram plates remained unused.²⁶

The Coburg Historical Society holds a small section of a ribbed steel plate (weighing about 60 lbs/yard), similar to those used in Sydney Road and Dynon Road by the Melbourne city council. The use of such plates would require that the plateway be pitched with stone cobbles though proof of this remains elusive. Indeed it is probable some track was pitched and other sections not. The one known photograph of a Coburg plateway is inconclusive – it actually appears to be channel upwards rather than ribs upward. Due to intersecting roads and cross traffic, the Coburg track was in three separate sections. To maintain continuity for loaded waggons the sections were linked by short lengths of pitched road pavement.

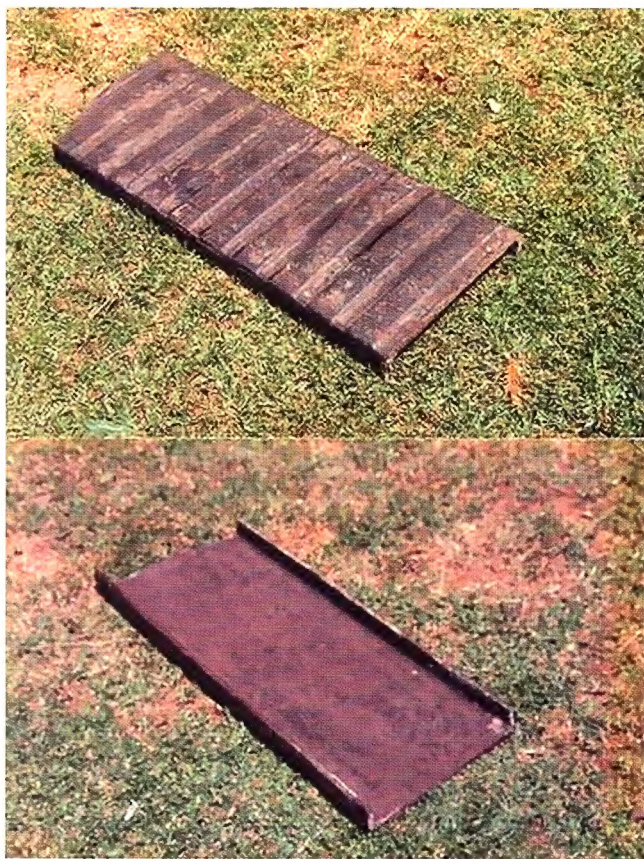
The total length of all the three sections of Coburg track is uncertain. We know the shire's municipal loans included £3510 for 'steel trams', which at about £2000 per mile would indicate around 1¾ miles of plateway though that length would vary substantially according to the standard of track and weight of plates. If 1¾ miles were built it would put the northern end of the Newland's Road track at the shire's boundary with Preston.

In 1911, whilst 'beating the bounds' councillors noted that the plateway needed repairing²⁷ and such must have occurred as the track still had many years of service ahead. Two years later an advertisement for 'Bluestone Quarrying Land' on the banks of the Merri Creek included the benefit of 'a steel track for drays' along Newland's Road. As late as 1930, the MMBW plan No.3533 shows that the steel track was still, at least, in Gaffney's Road, between Sydney Road and Champ Street.²⁸ The final date of removal from Newland's Road and Gaffney's Road is not known – MMBW plan No.3535 dated 1934 still shows some plateway in Murray Road adjacent to Dunstan's bridge.



Coburg, Newland's Road, 1914, looking north across the bluestone bridge over the Merri Creek. The plateway rises into the distance to service the area's many bluestone quarries. Unfortunately the original of this photo cannot be located at the present, however this copy gives a good idea of the Newlands area of Coburg in the early years of the 20th century.

Photo courtesy Coburg Historical Society



Upper and lower surfaces of a remnant piece of plateway track, Coburg. The worn, ribbed surface indicates that this plate was laid in a pitched track, most likely in Gaffney's Street (today's Murray Road).

Photo: Coburg Historical Society

South Melbourne

In the 1880's Sandridge Road (now City Road), was the main thoroughfare connecting the shipping piers and warehouses at Port Melbourne with the City and was subject to much heavy traffic, being often in a parlous state of repair. It traversed two municipalities, Port Melbourne and South Melbourne, neither of which had the resources to adequately maintain the road.

As mentioned in the introduction (in Part 1), in 1860 the Royal Commission on Harbour Improvements and a River and Harbour Trust recommended a stoneway or iron tramroad from Town Pier, Sandridge to Spencer Street in the City. Their suggested route crossed the Melbourne & Hobson's Bay Railway at Ingles Street, paralleled that railway and Sandridge Road for 1.3km along Normanby Road and then headed to the Yarra River, with a proposed swing bridge at the bottom of Spencer Street.²⁹ Needless to say, the M&HBR were not enamoured with the idea! Such a route, whilst not on Sandridge Road would, none-the-less, have lessened its traffic considerably. The Commission's principal suggestion was a ship canal from Hobson's Bay to the Yarra near Spencer Street – it sank without a trace, along with any plateway or stoneway.³⁰

Ten years later, 'C.E.' writing to the Emerald Hill *Record* was also suggesting that the Sandridge Road Trust would effect considerable savings by constructing a stoneway, similar to that in Commercial Road in London.³¹ A similar proposal had also been made in 1863, no doubt echoing the Royal Commission's idea. In August 1884 the idea of a plateway along Sandridge Road, similar to the successful Sydney Road track, was again raised, this time by local chemist John T Macgowan when announcing his (successful) candidature for the South Melbourne council.³²

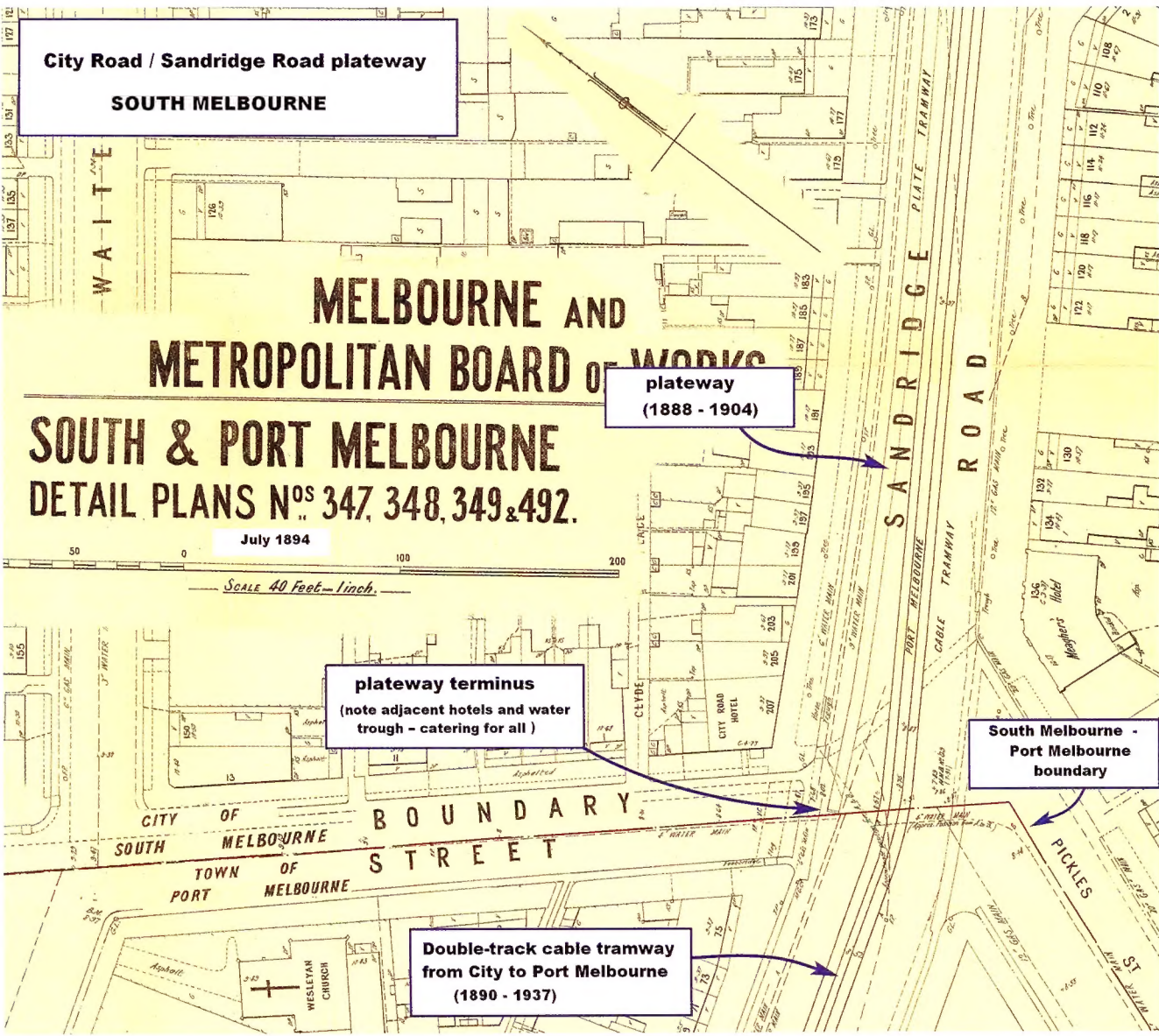
By mid-1885, the council was actively lobbying the Victorian government for assistance to lay a steel plateway along the road and were rewarded with a promise of £1000 if the council funded the other £2000.³³ Plates sufficient for 87 chains of track were ordered through the Melbourne agency of James McEwan & Company and were rolled in England by the West Cumberland Iron and Steel Company, Workington. In September 1886 the flangeless 11-inch wide Bessemer steel plates arrived – 676 being 17ft long and two of 8ft 6in length – weighing 80lbs per yard for a total weight of 137 tons.³⁴

No sooner had the plates arrived than the South Melbourne City Surveyor, P J Nolan, presented council with a report advising against laying them, preferring instead the slightly cheaper alternative of wood block paving.³⁵ The change of heart was partly due to the imminent arrival of cable trams along the road and the problems associated with accommodating both plateway and cable trams on the one narrow roadway.³⁶ This set off many months of discussion and indecision as the council and the government corresponded. Ultimately, the government made it clear that council would not get the £1000 grant if they changed the use of its loan funds from plateway to wooden pavement; the plateway duly proceeded.³⁷

Plate laying finally commenced in mid-August 1887, starting from the aptly named Boundary Street, heading north-easterly to Whiteman Street³⁸, before being extended past Clarendon Street,

to the intersection of Moray Street, a distance of 1.25 kilometres. From here, another track was started around the corner in Moray Street and continued northwards, for about 500 metres, to the south bank of the Yarra where the Falls bridge crossed into the City. The space between the ribbed plates, and a foot either side, was pitched with stone cubes; the plates themselves being recessed an inch below the stones to effect guidance. The total cost to council was £2023 5s and to the government, a thousand pounds. After some nine years the section of plateway in Moray Street was removed and the roadway reconstructed with wood block paving. In 1896 the plates thus removed were offered to the Shire of Moorabbin who declined them as they were flangeless.³⁹ They were subsequently purchased by the Shire of Broadmeadows for use along part of Sydney Road at Campbellfield.

Where the Sandridge Road plateway intersected the St Kilda suburban railway the plates stopped short of the railway lines on each side of the level crossing,⁴⁰ a situation that continued even after the crossing was replaced with an overhead railway bridge in 1901. In 1890 a double-tracked cable tram was built along Sandridge Road. To accommodate the cable trams at the tightest spot, council agreed to lift and relay of some eight chains of plateway at the Tramway Trust's cost. Also in 1890, in mid-August, a young man, William Mullinger, was driving a wagon along the plateway with two companions. It seems the three of them had stopped at a pub and partaken of a quantity of alcoholic beverage.



Back on the wagon they started arguing, leading to Mullinger falling from the vehicle, hitting his head on the tram plates and being killed instantly.⁴¹

By the mid-1890s some of the plates had become mis-aligned due to the heavy traffic, often leading to complaints. The late 1890s witnessed much of the shipping traffic shifting from the bay piers to the Yarra River wharfs and the new Victoria Dock. Additionally, with the plateway tracks not being as smooth as the new cable tram tracks, many carriers were actually driving their vehicles along the tram tracks, only moving aside when a tram appeared! In 1898⁴² and again in 1901, it was proposed to lift the 53 chains of tram plates and relay them at the Normanby Road-end of Lorimer Street, a heavily trafficked road adjacent to the wharves on the south side of the Yarra River.⁴³

Interestingly, in 1900 the council offered to sell the Sandridge Road plates to Port Melbourne for extension of its Ingles Street track but the offer was declined.⁴⁴ Another futile attempt was made to sell some to Port Melbourne in 1903. In mid-1904 council called tenders for the lifting of the plates (of the ribbed unflanged variety) from City Road and their relaying, in Normanby Road (33 chains, from Boundary Road to Ferrars Street), and the approach road to the council's tip on the eastern side of Albert Park (20 chains).⁴⁵ This work was done by the end of September 1904.⁴⁶ In October, 1922 the City of South Melbourne offered for sale an unspecified amount of 'Steel Cart Track and Timber Sleepers'⁴⁷ – this sale coincides with the lifting of the steel plate tramway from the part of Normanby Road between Montague and Johnson Streets.⁴⁸ The date of removal of the plateway across Albert Drive to the council tip is not known but likely coincided with the 1921 closure of the tip at that location.

Port Melbourne

In the adjacent Borough of Port Melbourne extremely heavy traffic was being experienced on a number of roads. On Ingles Street, in the low-lying and often swampy lands west of the Hobson's Bay Railway, an immense amount of sand carting was being effected by various contractors on land adjacent to the road – Ingles Street West was the main access to the sand pits on Fisherman's Bend. Additionally, the Public Works Department (PWD) was reclaiming much of the adjacent land facilitated by the use of temporary railways and tramways running from unloading stages on the Yarra bank. The borough council were tasked with keeping the road in order yet, initially, obtained no recompense from the government who were selling the reclaimed land and collecting many thousands of pounds annually. Accordingly, in May 1885 councillors proposed that the government assist in building a steel tramway to save the road.⁴⁹ Assistance in the form of a £500 grant was eventually forthcoming.

In April 1886 tenders were called for '48½ tons of wrought steel channel tramway plates'. James McEwan & Co submitted alternate tenders for delivery by sailing ship (£485) or steamship (£509 5s) whilst Briscoe & Co tendered at £569 17s 6d. Council accepted McEwan's steamship tender as it promised to be two months faster than sail. Unfortunately the whole matter came unstuck when McEwan got two different types of plates mixed up in the one order – presumable unflanged plates got mixed in with Port Melbourne's flanged plates and council enforced the penalty clause in the contract.⁵⁰ It wasn't until late December that council were able to call tenders for laying 46 chains of steel tramway in Ingles Street.⁵¹ Based on the above figures for weight and length it seems the plates were among the lightest used around Melbourne – the calculation being about 54lbs per yard; South Melbourne used 80lb per yard plates on Sandridge Road. The difference must be in the

thickness, the heavier being ¾-inch thick and the lighter only ½-inch thick. This would lead to problems in later years.

At the end of January 1887, Messrs Ross and Patience were awarded the contract for forming Ingles Street and laying the plateway at a cost of between £1520 and £1625 depending on determination of the road's final surface.⁵² By mid-March work was well underway. As constructed, the plateway ran down the centre of the 'road', from the railway level crossing adjacent to the north end of Port Melbourne North station (later renamed North Port), in a north-westerly direction. Crossing Williamstown Short Road, the plateway passed the Port Melbourne cricket ground, the soap and candle works of J. Kitchen and Sons and Apollo Coy Ltd and terminated outside the chemical works of Felton Grimwade and Company, a distance of one kilometre.⁵³

As the PWD was conducting reclamation works on both sides of the road they (the PWD) insisted on having the right to cross the plateway with its own 3ft 6in-gauge tramway. It seems this was done by heaping soil across the plates and laying a temporary tramway, causing drainage problems on the plateway. Ross and Patience complained to council, stating that they would not be held responsible for any damage done by Garnsworthy and Smith, the PWD's contractors.⁵⁴

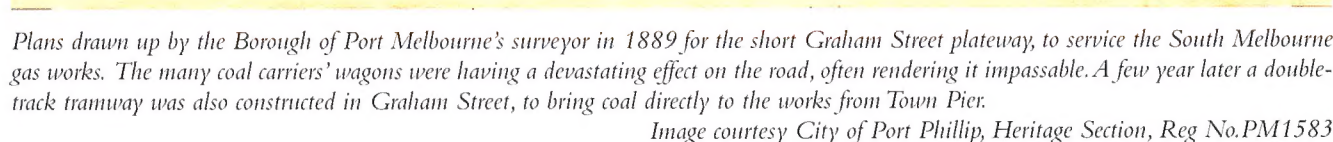
In 1900 neighbouring South Melbourne offered to sell its Sandridge Road plates to the council for extending the Ingles Street track but the offer was declined.⁵⁵ The Ingles Street line was not initially pitched with cobblestones, instead road metal was used which led to the creation of ruts beside the track where wagons got on and off the plateway. In 1904, at the suggestion of the Town Surveyor, the major part of a government grant of £200 was used for pitching part of the plateway, that leading to the Apollo candle works being selected.⁵⁶ Concurrently, the plates were taken up, straightened and re-spiked as many were out of alignment.⁵⁷ Two years later £85 10s from another grant was utilised by having contractor J A Brown continue with the pitching,⁵⁸ and again in 1907 and 1908. From the details available it appears that £80 was enough to pitch about 100 yards of plateway. Clearly, multiple contracts year after year were an inefficient way of doing the job but it was wholly dependent upon State government largess.

By the end of the first decade of the new century, sand carting was still being undertaken on Fisherman's Bend. In 1913 the Port Melbourne council again requested assistance from the State government, this time to extend the Ingles Street plateway a quarter-mile further westwards to alleviate the great damage being done to the outer end of the road. In September the Department of Lands and Survey advised the council that the government would advance two years' subsidy in one payment of £400 provided council made up the rest.⁵⁹ Tenders were promptly called for plates and bluestone pitchers for the track. The plates arrived in December and it seems likely the work was carried out in early 1914.⁶⁰

It is thought that these plates were Bochum Union road rails of the type recently installed in Moorabbin (see part 1, LR258) as, the previous year, the Port Melbourne and Williamstown councils' surveyors had one of their regular meetings about their perennial headache – Williamstown Short Road. They subsequently recommended that 170 chains of Bochum Union plates be laid along that road.⁶¹ The councils hoped that the government would stump up most of the money! The Ingles Street plateway was also subjected to very large tonnages – primarily sand – much in excess of that for which it was designed, and required continual maintenance. At a council meeting in early 1915, in response to a question about the buckling of plates on the 'Ingles Street Steel Tramway', the council surveyor replied "It's always on my mind."⁶²

A second, shorter, stretch of plateway was on the borough's south-easterly boundary with South Melbourne. The heavy traffic associated with the Metropolitan Gas Company's South Melbourne gasworks, traversed Graham Street to gain access to the coal yard at the works – coal inwards and coke

In mid-1888, the surveyor advised that tram plates were unprocurable in Melbourne, no doubt due to the 'plateway boom', but the 7½ tons needed could be added to an order being placed by hardware merchants James McEwan & Co on behalf of Richmond council. The cost would be £14 per ton – a considerable increase on the £10 10s recently paid for the Ingles Street plates. The surveyor recommended that



tenders for 120 tons of plates be called for – the bulk of them to be laid along 1¼ miles of Williamstown Short Road, from the Patent Hydraulic Freestone Company's works to Ingles Street, the rest for Graham Street.⁶⁶ This was duly agreed to but councillors must have had second thoughts about the Williamstown Road plates, no doubt due to the large impost such a purchase would have on the borough's coffers.

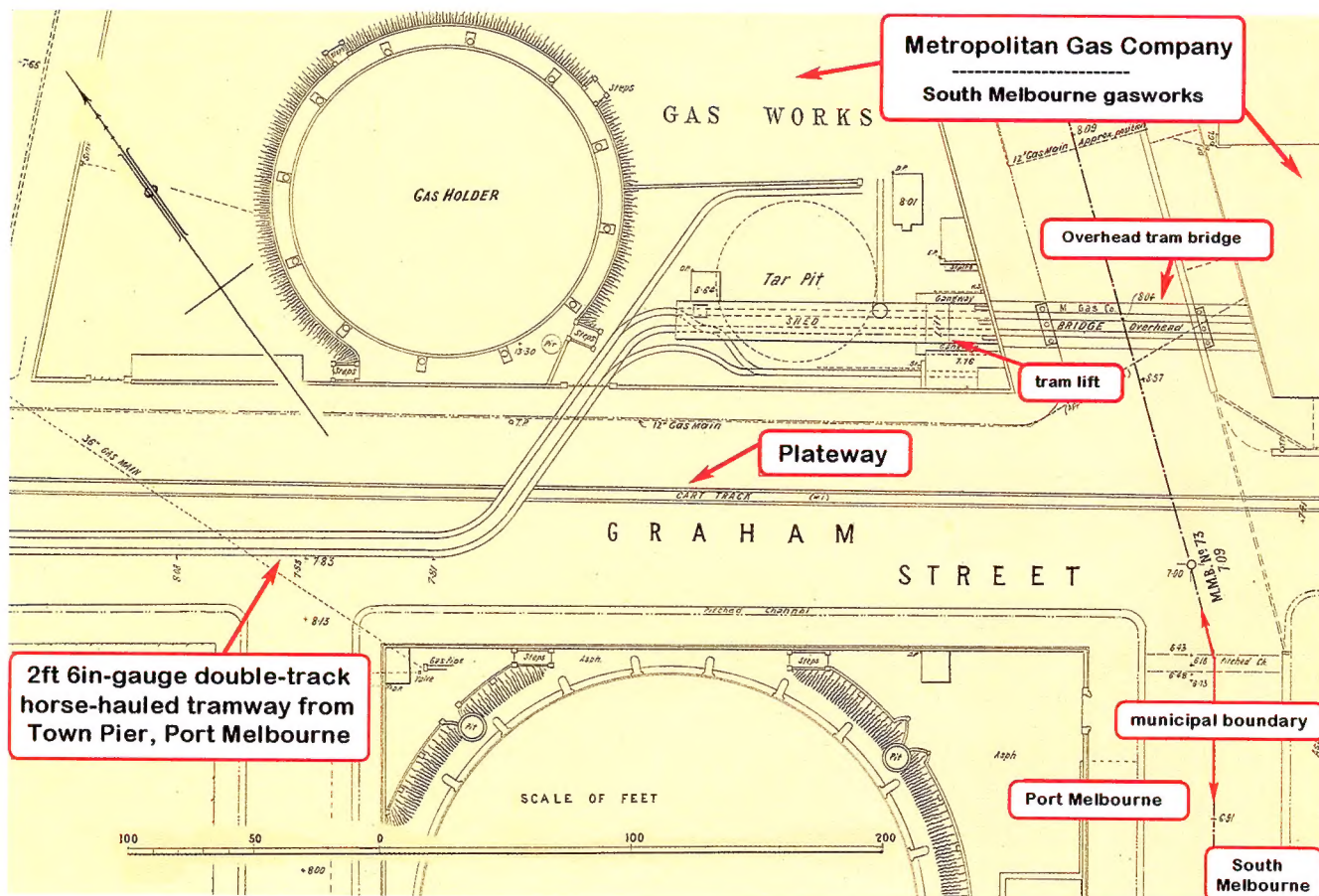
By December 1888, Graham Street was in dire need of some action and the cost was rising – £105 12s 6d for the plates and £360 for the construction work though the gas company was still to pay half of each amount.⁶⁷ The contract was finally let in June 1889 to David Foster at £347 16s⁶⁸ and was completed by mid-August.⁶⁹ About seven months later the eastern end of this track was extended some three chains into the City of South Melbourne, to the gaswork's eastern entrance – the contractor being William McKenna at £96 10s.⁷⁰ An interesting aspect of the Graham Street track was the level crossing it effected with the 2ft 6in-gauge double-tracked tramway that ran from the gas company's yard to Town Pier on nearby Hobson's Bay. No photograph has been found to explain the crossing – we have only the MMBW composite plan of 1894 to tantalise us.⁷¹ Was an actual grade crossing specially constructed or were removable rails for the 2ft 6ins-gauge line inserted when required?

As an aside, although the MMBW plan states 'wrought iron' cart track, it was constructed with steel plates, of the type being used in Brighton and Moorabbin, with a running surface width of 11 inches and a small flange along each side but laid to a wider gauge. Whereas the tracks along Point Nepean Road could cater for waggons with wheels between 4ft 6in to 5ft 2in apart, (inside of the tyres), the Graham Street track accommodated larger waggons with an inside wheel gauge between 5ft 4in and 5ft 8in. This is clearly shown in the plan for the works. Note the inch gap between

the plates, to allow for expansion in hot weather. It seems that the plates were lifted from Graham Street in 1910. In January of that year the council's Public Works committee recommended removal of the plates, subject to the agreement of the Metropolitan Gas Company, as the plateway was said to be disused and 'out of repair'.⁷²

In 1893 the Town of Port Melbourne gave notice of intention to raise a loan for £10,000 for a range of drainage and street works. Included was £315 for a steel plateway in Normanby Road, from the Ingles Street plateway, northwards to Boundary Street.⁷³ (South Melbourne's 1904 line in Normanby Road commenced from where the Port Melbourne line would have finished – the aptly named Boundary Road.) The loan was poorly subscribed, no doubt due to the worst possible timing – it was the absolute depth of the Depression and financial institutions were failing at an alarming rate, and the works were not carried out.

Twenty-two years later, in early 1915, with the Great War just a few months old and anti-German feelings running high, Messrs Diercks and Company, the Melbourne agent for Bochum Union, offered the Port Melbourne council some surplus steel tram road plates at a reduced price, viz. 4½ chains for £51 10s. The council's public works' committee recommended acceptance of the offer and proposed that the plates be laid in Normanby Road, between Ingles Street and Boundary Road or as far as they would extend – reviving the 1893 plan.⁷⁴ Following some animated discussion in council the offer was rejected. Cr Tucker stated that though Diercks could claim to be purely an Australian firm, its product was not. It was German and council refused to entertain any offer of German-made goods!⁷⁵ The plates were subsequently purchased by the Melbourne Benevolent Asylum at Cheltenham – further details are included under the Moorabbin system in Part 1.



Broadmeadows

During the 1890s, the Shire of Broadmeadows was a large sprawling rural area across the northern fringes of Melbourne, a position not dissimilar to that of Moorabbin in the south except, due to the mainly pastoral pursuits – and thus larger land holdings – its rate revenue was but a quarter of Moorabbin's. Traversing the shire, near its eastern boundary, from south to north, was the Sydney Road, eight miles of which were the responsibility of the shire to maintain and which consumed a considerable portion of the council's meagre income.⁷⁶ Of that eight miles the worst stretch of road was invariably the couple of miles from the shire's southern border (with Coburg) to Campbellfield, a small village of around 200 souls, about 17km north of Melbourne. Superior white clay deposits had been found at Campbellfield and rather than build potteries at that place, the companies preferred to transport the clay, by horse-drawn drays and wagons, south, to existing potteries in Brunswick.

In September 1896, South Melbourne – having failed to sell them to Moorabbin – offered Broadmeadows council some 202 ribbed, non-flanged plates, each 17ft in length. Council, sensing a bargain, quickly sealed the deal, paying just £5 per ton, less than half what they had originally cost. Also purchased by Broadmeadows was the corresponding Red Gum sleepers, at 5s per hundred super feet.⁷⁷ The materials were duly laid along 572 yards of Sydney Road.

Ten years later, with ever increasing clay traffic on Sydney Road around Campbellfield, and with the initial plateway proving successful, Broadmeadows raised its first municipal loan. This borrowing, in early 1907, of £2000 (more than a whole year's shire revenue) was recommended by the shire's consulting engineer, Edward Parnell Muntz CE, specifically to build a 'stone tramway' on the eastern side of Sydney Road, from Wheatsheaf Road to Campbellfield, a distance of about 1½ miles.⁷⁸ Wheatsheaf Road is thought to be where the existing plateway terminated.

The building of a stoneway, at this late date, was unfortunate. Why Muntz, one of a family of eminent engineers, ignored the technically superior Bochum Union steel plates as then being installed in Moorabbin is unknown. For the funds available they would have got the same length of track but a far superior, more durable and maintenance-free product. Whilst bluestone is a hard material, under heavy and continual steel-tyred dray and wagon traffic it soon shows signs of uneven wear.[†] Construction is thought to have occurred in 1908; the horse-path between the parallel lines of bluestone 'runners' was paved with smaller bluestone pitchers.

Within five years the stoneway had become a maintenance problem. A year later it was the subject of earnest discussions between the newly-inaugurated Country Roads Board (CRB) and the council. In August 1914 the CRB proposed reconstructing the stoneway at a cost of £1100 per mile – once reconstructed they wanted council to pass a by-law making it mandatory for heavy vehicles carrying stone, clay, bricks or sand to use the stoneway.⁷⁹ Whether this work was done or not, is unknown; the CRB did spend over £3000 on the three-mile stretch of Sydney Road north of the Coburg boundary in the year 1914–15, however it is thought little of this was on the stoneway.⁸⁰ By early 1921 the Broadmeadows shire's next engineer, W. Murray Pullar described the stoneway as 'practically out of use' and a 'ghastly waste of money'.⁸¹

[†] Such uneven wear is visible in many back lanes around Melbourne. The author is familiar with the back lanes around Cremorne and can vouch that many decades of night-carts have worn smooth, but undulating, parallel ruts in the bluestone cobblestones.

Eighteen months later, with the CRB refusing to pay for the removal of the stoneway, the shire engineer recommended that the 'running stones' be lifted and crushed for road metal and the horse-path pitchers be lifted and retained for later use.⁸² The metal plateway was also to be removed and sold for scrap – by this time the wooden sleepers would have been much deteriorated, a prime reason for the unevenness of the metal plates. In March 1923, the shire called for tenders for 'removal of 140 chains (more or less) of stone and steel tramway on Sydney Road, Campbellfield and restoring of curvature of road'.⁸³ It is thought removal followed during that year. Readers will note that the total of the original plateway (26 chains) and stoneway (130 chains) do not equal the length to be removed; the author has no answer for this except to suppose that some of (probably) the stoneway had previously been removed.

West Melbourne – Dynon Road

When the Coode Canal was excavated in the 1880s to cut off a large dog-leg in the Yarra Yarra River, an extensive swampy area, known as Batman's Swamp or West Melbourne Swamp, still remained north of the old river course. Subsequently, over many decades, it was drained, reclaimed and turned into prime industrial land. On the northern side of the swamp was an oft-muddy track, aptly called Swamp Road. In 1910, following years of complaint, the Melbourne City Council (MCC) made plans to raise, straighten and construct the road (wood-blocked) to create an all-weather route – Dynon Road – linking Footscray to North Melbourne. Due to the large traffic along the road (it was the shortest land route from the city to Williamstown) and its inherently soft base it was recognised that a plateway would be required for the use of heavy wagons.

By early 1910 some £8000 from the MCC's next municipal loan was earmarked for laying two lines of plateway, one on each side of the road. In May, the council's Public Works Committee, faced with the need to widen Sydney Road through Parkville and provide a plateway in Dynon Road, suggested lifting the ribbed tram plates from Sydney Road (brick-laden wagons then being much fewer than 20 years previously) and laying them along Dynon Road thus reducing costs considerably – a saving of £2500 being estimated.⁸⁴

That idea failed to get off the ground as did a suggestion in June of ordering Bochum Union plates as recently used by Moorabbin shire. Despite advice that the Bochum Union plates were an advance on the Sydney Road plates, being more durable and cheaper to purchase, lay and maintain, a majority on council were against them as they were made in Germany. The MCC wanted Australian plates and if no such item was locally made, British plates were then preferred.⁸⁵ Moorabbin, being a poor shire, did not having the luxury of being xenophobic; they had duly heeded its engineer's recommendation and got a better, cheaper article.

The MCC advertised for tenders in June 1910 and again in October and also enquired of several other local councils as to whether they would like to join the tender process. The first advert called for 390 tons of plates, the second for 2000 plates. As some four lengths, each of about 2700 yards were needed it seems the plates weighed around 80lbs per yard.⁸⁶ Unable to find a local manufacturer, matters dragged on until July 1911 when two Melbourne iron merchants submitted offers – Briscoe & Co £1510 14s 6d f.o.b. Antwerp; and Edward Duckett and Sons £1831 0s 3d f.o.b. Liverpool, each for 1000 tram plates. Despite the Belgian material incurring a Commonwealth import tariff of five per cent it was still more

than £260 lower and resulted in some animated discussion in council – the best quip being from Cr. Crespin: “I am as loyal a Britisher as anyone, but I would not give 20 per cent preference to my grandmother!”

In the end, however, xenophobia again won the day; Ducketts got the contract and the ratepayers footed the bill.⁸⁷ Little did they know that in three years’ time Australians would be fighting and dying for Belgian freedom. Readers will have noted that only 1000 plates were ordered. This was because council had again changed its mind regarding the plateway in Sydney Road having in late September called tenders for ‘Taking up Horse Tramway in Sydney-road and relaying same in Dynon-road’.⁸⁸ That would provide enough plates for about 115 chains of track; sufficient for about half the required distance.

Events seem to have stalled for a year, maybe awaiting the necessary loan to be established, or more likely there was a delay in having such old-style plates specially rolled in England. Finally, in early 1913 the MCC called tenders for timber sleepers (which presumably included the longitudinals) and, in May, for the laying of two lines of ‘steel tramway track’ along the road.⁸⁹ The actual completion date is not known – both tracks were certainly there by 1914 – for what were to be the last new plateways built around Melbourne excepting a short extension to the Ingles Street line in Port Melbourne and the probability that the Benevolent Asylum at Heatherton laid a short track during the Great War. Coincidentally, it had been the same council that had built the first line in Sydney Road,

more than 33 years previously. The MCC’s finance committee report for the calendar year 1913 shows that around £4668 was spent on the new “tram track, Dynon-road”.⁹⁰

The 1922 MMBW plan No. 652 shows a ‘tramway for heavy traffic’ along the south side of the road, commencing a hundred yards east of the bridge over the Maribyrnong River. Plans further east were not located, however a number of photos from 1927–28, when the VR was constructing the South Kensington to West Footscray goods line, which



Dynon Road, c1931. Enlargement of a section of the photo that was on page 5 of LR258, showing detail of the ribbed plateway track and bluestone pitchers. Much of this track was that lifted from Royal Parade around 1912 and relaid in Dynon Road the following year, supplemented with newly-rolled plates imported from England.

Photo: Public Record Office Victoria PRS 12800/P3 item ADV 0899 Public Transport Corporation photographic colln

entailed a bridge over the road, show plateways along both sides of Dynon Road. Other photos, from the early 1930s, of the eastern end of Dynon Road at the overbridge adjacent to North Melbourne railway station, confirm the plateways length were each about 2½ kilometres. At the Moonee Ponds Creek the tracks stopped each side of the bridge, the actual bridge being cobbled. From the photos it is clear that ribbed steel plates were used, slightly recessed below the surface of the adjacent stone pitchers.⁹¹ As the ex-Sydney Road plates were ribbed it was deemed necessary that the new 1912 English plates were the same

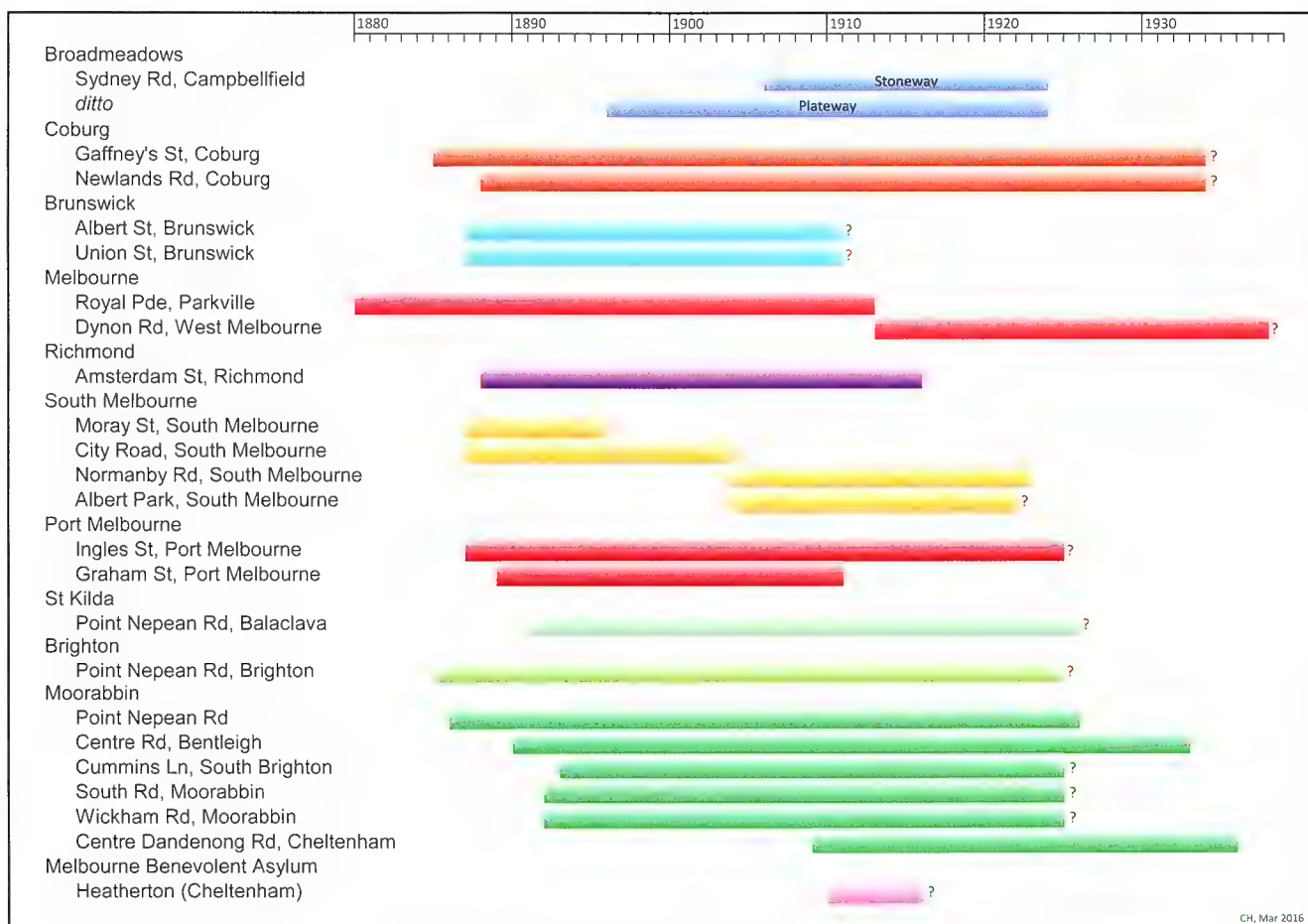
for compatibility. What the English steel masters thought of ‘the colonials’ ordering such antiquated track is unknown!

It is not known for certain when the tracks were removed; they were definitely there in mid-1934 when a cyclist, wheeling his bike along the tram plates at 2am one morning was struck and killed by a motor car.⁹² The cyclist’s widow was subsequently awarded £1650 in damages. Removal, or part removal, possibly occurred in 1937 when the



The new South Kensington to West Footscray railway goods’ lines required the bridging of Dynon Road. In this January 1927 view we see the northern abutments are complete and one of the 112ft-long steel bridge girders resting on a crib of sleepers. Motoring past, heading eastwards, an automobile travels along the plateway. It was such activity that resulted in the death of a cyclist, also using the plateway, one night in 1934.

Photo: State Library of Victoria, ref H2001.308/2808 photographer Wilfred Disney Chapman



Time Line diagram, showing the various plateways mentioned in parts 1 and 2 of this article, and their known years of operation. The last year of use for many lines has not been precisely established and any advice in this regard would be gratefully received. Diagram courtesy of Colin Harvey

MCC undertook another reconstruction of Dynon Road, including a separate path for cyclists. In September 1938 the MCC had a clearing sale at its Dynon Road depot that included redgum sleepers and 200 tons of steel tram track.⁹³ That tonnage equals the amount from one of the lines, which makes one wonder if only one track had been removed. Some of the track was purchased by a local scrap merchant, the New York Junk Co, which soon had it for sale from its Collingwood depot. The plates were of 13ft and 20ft lengths and 11 inches wide.⁹⁴

Other lines, built and proposed, in Victoria

In addition to the above lines a couple of municipalities built short lines for particular local requirements. These include the Shire of Bulleen, who in 1886 purchased a few tons of tram plates from Moorabbin council for a short trial plateway on Doncaster Road, up Smedley's Hill.⁹⁵ There was some dissent from ratepayers at the expenditure and whether the plates were actually laid is unknown.

In April 1887 the City of Richmond gave notice of raising a large municipal loan, some £500 of which was for a plateway in Amsterdam Street, in South Richmond.⁹⁶ A year later tenders were called for the plateway's construction but all came in over budget.⁹⁷ In March 1889, with extra finance arranged, tenders were again called and the plates finally laid.⁹⁸ The track ran from Church Street to Mary Street (about 300m) where it terminated at the stone quarries adjacent to the Yarra River. The track was removed in 1915 though residents had been complaining of the bad condition of the street and the tram plates for many years.

Additionally, a number of schemes were seriously proposed

and in some cases a considerable amount of planning done. In 1891 North Melbourne proposed a plateway on Macaulay Road, from Boundary Road to Arden Street.⁹⁹ It progressed to the planning stage and enquiries were made of the South Melbourne council regarding some surplus material they had for sale. The interesting Footscray proposal of 1884 was for a 'stone tramway' (stoneway) along the western end of the Swamp Road (now Dynon Road) which, at the time was within the Borough of Footscray and a continual drain on the council's finances – the road's name is a good indication of the problem.¹⁰⁰ A year later Cr Falkingham was instead proposing that two parallel steel plateways be laid¹⁰¹ – such a scheme finally became reality in 1913 courtesy of the MCC, not Footscray.

Outside of Melbourne, in 1896, the Shire of Wodonga investigated a plateway for the Albury Road, a large and constant drain on their finances. Annually, the council received a government grant of £400, woefully inadequate for the task, which included maintenance of the various bridges leading to the border. Following a suggestion by Mr Isaacs[‡], the local MP, council sent their clerk of works, Mr Woodland, to inspect the Brunswick and Melbourne plateways and ascertain costs. In his report he recommended a distance of 104¾ chains of plate track be laid in the centre of the road, from Wodonga to the NSW border but omitting tracks on the five bridges encountered. The plan called for plates weighing 78 lbs per yard, laid on redgum bearers supported on redgum sleepers, with bluestone pitchers alongside the plates. Estimated cost was around £4100. Mr Isaacs duly submitted the plan to the

[‡] Isaac Alfred Isaacs, MLA for Bogong 1893-1901, knighted 1928, Governor-General 1931-36

government, seeking assistance. The Victorian premier replied that he couldn't agree unless a large reduction was made in the annual grant for the road's upkeep!¹¹⁰² Unsurprisingly, the plan lapsed.

Apart from those just mentioned, some others on the below list may have been built but no definite evidence has been found by this author. Shires/towns, locations and dates include:

Brunswick (Sydney Road) 1879
 Melbourne (St Kilda Road – plateway & stoneway) 1885
 Northcote (Rucker's Hill – Separation Street to Northcote bridge) 1885
 Port Melbourne (Williamstown Short Road) 1884-5, 1890, 1913
 Williamstown (North Road & Mason Street) 1890
 Footscray (Swamp Road) 1884 + 1885
 Moreland (Sydney Road – 2 miles) 1887
 Northcote (High Street) 1888
 Northcote (Dennis Street) 1888
 Ormond (Reid's Hill, North Road) 1889
 North Melbourne (Macaulay Road) 1891
 Caulfield (Dandenong Road – Orrong to Kooyong Rds) 1895
 Wodonga (Albury Road, to the NSW border) 1896
 South Melbourne (Lorimer Street) 1901
 Yarraville (Lennox Street) 1912
 Cheltenham (Tulip Street) 1917

Aside from the serious proposals there were many councils who wished they had plateways for 'their' particular heavily-used road. The discussion commonly started in a council meeting when one member started lamenting maintenance costs on a particularly abused road and another

councillor would retort "Build a steel track!". Shire of Braybrook (for Ballarat Road, due to stone quarry traffic), and Shire of Corio (for Fyansford Road, due to cement work's traffic) are two examples. Should readers know of other lines, either seriously proposed or actually built, I trust the Hon Editor will allow such details to be published in the Letters pages. The same equally applies, should readers be able to add to these notes, or correct some of my assumptions or queries in this brief history.

Why Melbourne?

What made Melbourne so conducive to the construction of steel road plateways and why, particularly between 1885 and 1895? As outlined in the Introduction (see part 1), Melbourne grew at a phenomenal rate in the 1870s and 1880s. This growth placed a near-impossible burden on the municipal councils to fund and build the infrastructure fast enough to satisfy demand. No other city in Australia had such a concentrated growth spurt. Suburban growth, aided by the growing railway network enabled people to reside further from the city, no longer having to live within walking distance of town. The earliest market gardens around the inner city were devoured by 'suburbia'. Market gardens had to move further from the city, to areas with virtually no structured roads. Building industries were booming – bricks, earthenware, stone and sand all needed transporting in prodigious amounts. Imports and exports boomed putting huge strain on roads leading to the wharfs and piers. Nightsoil and other waste required removal – sewers were non-existent. Most great cities of the world had evolved over time, infrastructure generally almost keeping pace with population growth. Not so Melbourne. Plateways provided an answer to this problem.



Dynon Road looking easterly, c1932, viewed from the bridge over the Moonee Ponds Creek. At this point the road pavement narrowed and the plateways stopped each side of the bridge – the bridge being fully pitched obviating the need for plates. On the right, over the fence, we are looking end-on at VR wagon sidings on the north side of the North Melbourne locomotive depot. On the left, beyond the fence, are goods sidings and then the railway tracks to Footscray. Out of sight to our right, the Moonee Ponds creek became the Railway Coal Canal, which flows southwards to the Yarra.

Photo: Public Record Office Victoria PRS 12800/P3 item ADV 1080

When the first section of the Point Nepean Road system was opened in 1885, it was said that it would last for forty years – a rather prophetic statement at a time when motor transport was unknown. The original system of laying sleepers proved to be its “Achilles’ heel” – even Red Gum rots eventually and after thirty or so years most lines were showing their age as the sub-structure deteriorated. Unfortunately, the introduction of the Bochum Union steel track came too late to solve that problem – the first such section had hardly been laid than the first stretch of sleepers plateway was being lifted. Nonetheless, the metal plateways around Melbourne solved a time-specific problem and enabled a number of local councils to stretch their meagre funds and keep the heaviest-trafficked roads functioning until road infrastructure caught up with population growth.

J M Coane, the Brighton engineer, writing in 1908, said that the use of plateways saved the roads a great deal of wear and tear but conversely thought the monetary saving on this account was not very great!¹⁰³ That is at variance with figures as calculated by the MCC relative to Royal Parade. For the eleven years 1869 to 1879 inclusive, over £11,178 was expended on labour and metal to maintain the road¹⁰⁴ – and it was a losing battle. That cost was one of the key reasons for the building of Melbourne’s first plate tram along that road in 1880 – the plateway cost but a third of that amount. Even though the initial cost of a plateway was fairly high, it could be financed by a loan and be paid off over twenty years. With a plateway in place, the savings delivered via reduced road maintenance made good economic sense at the time – and, importantly, provided an all-weather means of transport.

Postscript

In the first part of this article I noted that local knowledge of London’s Commercial Road stoneway was well-known. That stoneway also had a couple of short lengths with metal plates and I suspected it was the inspiration for the MCC’s Parkville track. Further enquiries have also revealed a number of wide metal plateways with minimal flange heights in the former West Riding of Yorkshire.¹⁰⁵ Generally associated with collieries, mills and quarries, these short plateways were often on steep roads and occasionally associated with stoneways. Most are believed to have originated in the late 19th century and some lasted into the 1920s. They were used by ordinary horse-drawn wagons and carts.

Plates commonly had treads about 7in to 10in wide and flange heights between ½ to 1½ inches. A few were laid on cross sleepers or stone sleeper blocks but most had their plates affixed to the top of lengthy wooden baulks which were held at width by sleepers, and had a pitched horse path plus stone blocks outside the plates for stability. This construction is virtually identical to those used locally bar one key difference – Melbourne’s (except the later Bochum Union plates) were either double flanged or flangeless.

Did the MCC’s investigations in 1879 lead them to West Yorkshire? Maybe to the Low Moor Ironworks near Bradford – thought to have been an important manufacturer of the broad plates used. In 1901 Low Moor lost all their old patterns in a fire and one wonders whether this was the reason it took the MCC a long time to get new plates rolled in 1912. Clearly more research is required; this may be an example of technology transfer, from West Yorkshire to Victoria, which was applied here for an entirely different purpose from that which it was being used around the Halifax, Bradford, Dewsbury and Wakefield areas.

Acknowledgements

My thanks to Jim Longworth, who, in writing a plateway article to cover all of Australia for the Early Railways conference in Britain, kept prodding me with questions about lines in Melbourne. This prompted me to assemble my various random notes into some sort of proper order. Jim compiled the original draft for the Melbourne part of his article which he asked me to review. I found I had so much extra material that it was decided to split Jim’s article into two with myself to concentrate on Melbourne (which itself had to be split into two parts). Thanks to Colin Harvey, who generously made available his plateway notes gleaned over many years of research at the PRO and elsewhere. Subsequently, Colin read my efforts, provided valued suggestions and created the time-line diagram. Thanks to the City of Port Phillip, (particularly Anne Scambary in the heritage section); to Helen Stanley for generously sharing her late uncle Vic Smith’s (1896-1974) photographs of Bentleigh, and Joan Moore of the Box Cottage Museum at Ormond; and to Helen Laffin at the Coburg Historical Society for searching for a much wanted photograph. Lastly, my thanks to the taxpayers of Australia (you know whom you are!) who provided the funds to enable the National Library of Australia to create Trove and digitise hundreds of Australia’s fragile and valuable newspapers.

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97. *The Argus* 8 May 1888
98. *The Age* 12 Mar 1889
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100. *The Independent Footscray*, 21 Jun 1884; 6 Aug 1887
101. *The Independent Footscray*, 20 Jun 1885
102. *Wodonga and Towong Sentinel* 17, 24, 31 Jul 1896
103. *Australasian Roads: A Treatise*, etc., Coane., J.M & H.E & J.M.jnr; George Robertson & Co Melbourne 1908
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105. *Recent Uses of Horse Plateways in West Yorkshire*, I C Dodsworth, in *Industrial Archaeology Vol 7*, David & Charles 1971

The Argus Tue 8 May 1888

CITY of RICHMOND.

TENDERS will be received until 7 p.m. on Thursday, May 10, 1888, for—

1. Construction of a Steel Tramway in Amsterdam-street.

2. Construction of Seymour-street.

Plans and specifications can be seen at the Town Clerk's Office.

THOMAS GARDNER, Town Clerk.
Town-hall, Richmond, April 27, 1888.

The Argus Tue 6 Mar 1923

SHIRE OF BROADMEADOWS.

TENDERS, addressed to the President, are invited for the undermentioned WORKS, to be carried out under the provisions of the Country Roads Board Act, 1915, for:—

REMOVAL OF 140 CHAINS (more or less) of STONE and STEEL TRAMWAY on Sydney road, Campbellfield, and RESTORING of CURVATURE of the ROAD to LEVELS as specified.

Tenders must be lodged at the Shire Office, Broadmeadows, on or before noon on THURSDAY 15th March, 1923.

Specifications may be seen at the Shire Office, Broadmeadows, and at the Office of the Country Roads Board, Titles Office, Melbourne.

By order.

A. T. COOK, Shire Secretary.

3/3/1923.

The Duranbah CSR Tramway

by Peter Cokley

Preamble

This Tweed River NSW article opens with frustrated 1890s Duranbah cane farmers having to cope with massive problems transporting their cane by horse wagon to the local Colonial Sugar Refining Company's (CSR) Duranbah wharf. Considering the tonnages and the era, the solution was a tramway. The CSR Duranbah wharf on Stott's Channel was linked to the 1880 opened CSR Condong sugar mill by a 11 km Tweed River trip. Condong is about four km north of the major town of Murwillumbah.

The transport difficulties had got to the point that CSR's Tweed cane inspector Russell Dowling¹ informed the Sydney office on 10 March 1894 that he had great trouble in getting Duranbah's previous season's 2,500 tons to the Tweed River, even though the season was comparatively speaking a dry one. After rain, Dowling wrote, it was impossible for either horses or bullocks to travel, even a thunderstorm could cause delay. The tonnage for 1894 was estimated at 6,000 tons, more than double the previous amount. Although, by the time of Dowling's 10 March 1894 letter, as will be shown below, Duranbah cane farmers had already signed a contract for supplying land free of charge for a tramline.

The outcome was when Lismore's *Northern Star* newspaper of Saturday 29 September 1894 announced the Duranbah tramway commenced cane haulage the previous day. But the still unresolved question is how long did it last? Evidence suggests some Duranbah farmers eventually transferred to alternatives such as dairying, in the early 1900s.

CSR's Tweed River Strategy

As readers would expect, the Duranbah tramway was part of CSR's business strategy of ensuring adequate cane supply for the Condong mill. Besides Duranbah, CSR also pursued cane supply contracts in other Tweed areas including downstream of Duranbah. These included Terranora on the northern side of the river opposite the Chinderah wharf. As will be detailed below, CSR's strategy also effectively blocked its rival Robb & Co's Cudgen Plateau 1882 mill from any cane source beyond the area near its Cudgen mill.

CSR's² Tweed Letter books Nos.2 and 4 showed Terranora discussions between 9 April 1883 and 15 May 1886. These included with a farmer by the name of John Cowan on 24 July 1886 who eventually received CSR planting approval on 29 May 1888. Cowan's name sometimes appeared in documents as Cowen.

There were at least three 1890s CSR Terranora tramways, with cable (self-acting incline) portions. These self-acting inclines carried cane down the southern slopes of the Terranora Ridge to wharves where the crop was then loaded onto CSR's punts. A fourth Terranora district horse tramway at Duroby Creek, on the northern side of the Terranora Ridge, would eventually carry cane to CSR via the Terranora Broadwater punts as well.

Briefly, the Terranora self-acting inclines included the operations of Elijah Caleb Job (Caleb) Marks, the previously mentioned John Cowan and Thomas Fraser. The Duroby

Creek tramway was also linked to Caleb Marks. Cowan's property was later sold to the Joubert family who continued the tramway operations. Grafton's *Clarence and Richmond Examiner* of 28 June 1892 reported the construction of Cowan's cable tram on his land on the Terranora tableland down to the river and *The Sydney Morning Herald* of 6 December 1892, also remarked on it. That meant Cowan's CSR tramway predated the Duranbah 1894 CSR line. The Cowan / Joubert land was on present day Sunnycrest Drive, Terranora. The Fraser's large 'Lovat Brae' house still stands (2019) on the corner of Fraser Drive and Terranora Rd. The Marks' property was at the western area of Terranora Rd west of the intersection with Bilambil Rd. This is the Bungalora district, named after the Marks' property. More on Caleb Marks' tramway can be found via Trove in the *Tweed Daily* (Murwillumbah) of 27 April 1945. This brief mention of the Terranora lines is included in this Duranbah article as both the Duranbah and Terranora farmers compared the tramway wagons each group was using, and details will be seen in the wagon section below. There were many other Terranora CSR cane growers and CSR's Terranora tramways will be analysed in depth in a later article.

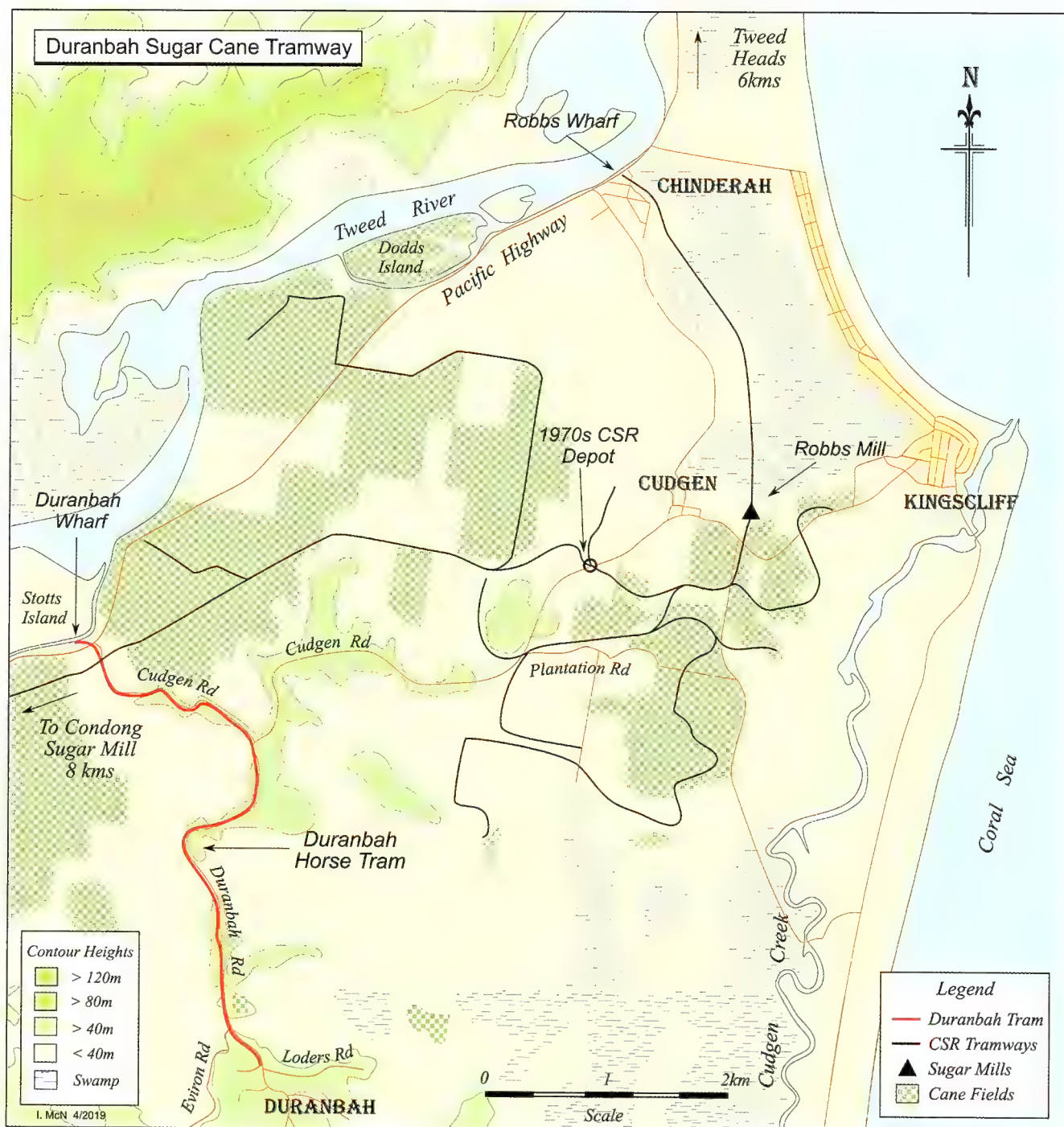
In the late 1870s, before the Condong mill's August 1880 commencement of crushing, CSR had also pursued cane contracts in the Cudgen district, but major Cudgen farmers Guilfoyle and Henry Clarke wrote to CSR on 19 January 1880, complaining the price offered was too low.³ *Trove* shows Guilfoyle instead later sold land to Robb and Co of Melbourne and Henry Clarke sold land to a William Warner Julius whose Cudgen Plateau sugar mill was opened on 26 October 1882. Julius' newly built mill was very quickly taken over by Robb & Co in December 1882. Robb & Co then became a partnership between John Robb, James Casey and William Julius, the previous mill owner. Thus, CSR's 1880 Condong mill predated the rival 1882 Cudgen mill by two years.^{4 5 6}

CSR's strategy around Terranora etc meant by the time *The Sydney Morning Herald* of 14 October 1891 reported Robb & Co's tramway was underway, CSR had effective control of the non-Cudgen Plateau cane supplies. Thus, CSR had restricted Robb & Co's cane source to the area close to its Cudgen Plateau mill. In the end, the Robb & Co Cudgen operations were sold to CSR in March 1912. More on the Cudgen situation can be found in this writer's article on Robb & Co's Cudgen mill operations in *Light Railways* LR 265 of February 2019.

As well as the Duranbah and Terranora tramways, CSR had early lines in other regions. Lynn Zelmer's '*Portable Railway Track for Light Railways*' LR 230 April 2013, notes CSR's Homebush mill in north Queensland had the Decauville portable rail system in 1883. Also, the *Clarence and Richmond Examiner and New England Advertiser* of 30 June 1883 noted CSR imported a shipload of steel rails for portable tramways for farms in the vicinity of German and Emigrant Creeks. This was for CSR's Richmond River Broadwater Mill. German Creek was located partway between Ballina and Wardell and changed its name to Empire Vale around the time of the Great War (WW1). Emigrant Creek is on the northern side of the Richmond River.

Local History

The Duranbah district consists of a series of ridges and small plateaus with a large plateau on the southern end. European settlement dates from around the 1870s at least, with the Duranbah Public School established in 1892. The Duranbah



farming district is not to be confused with the surfing community's mecca, Duranbah Beach or 'D-bah' beach as they call it, several kilometres away at the Tweed Heads river mouth. This beach is named after the SS *Duranbah* which was temporarily stranded on it and later refloated in 1919. The SS *Duranbah*, launched 1905, was named after the Duranbah district. Locals have told humorous stories of surfboard laden mini vans roaring along Duranbah Rd, past the Public School, looking for the fabled beach.

Stotts Channel is the water way on the southern side of Stotts Island, with the CSR Duranbah wharf being in Stotts Channel. Pictures of cane loading at a wharf on Stotts Channel suggest parts of that channel were wider than the present-day narrow width, remembering they had to fit a tug and punts. The term Stotts Creek district, both in the 19th century and the present era, is the very broad general area near that island. But identifying the actual Stotts Creek watercourse itself is complex, as many creeks in that area were redeveloped with

the various swamp drainage schemes that resulted in extra cane land.

The Stotts Creek Post Office and public wharf were near the Byrne's property, a few hundred metres north of Stotts Island, with Trove recording Mrs Byrne as the post mistress in the early days. Some pictures examined by this writer seem to caption any wharf in the wider Stotts Creek district as the Stotts Creek wharf, suggesting it was also a generic name for any nearby wharf, including private wharves. Parts of the Byrne's and Brinsmead's tramlines are marked on the map between Stotts and Dodds Islands and will be left for a future article.

Duranbah Cane

CSR's Duranbah activities went as far back as 9 August 1888 at least, when CSR's Tweed Letter book No.5 noted Duranbah and Cudgen soil samples were taken, and plots of various cane varieties were grown and tested for quality.

Also mentioned in that 1888 letter was the possibility of a Duranbah tramway to carry cane to the Tweed River. Move forward to 24 June 1890 and a group of 11 Duranbah settlers petitioned CSR seeking a loan of £2500 to build a tramway to enable them to plant cane for sale to CSR.⁷ This predates the 1891 Robb & Co Cudgen tramline. In the letter the farmers stated they were 'desirous of growing sugar cane for which the soil of the district has been proved to be eminently suited'. But they also stated that the district was so far removed from the river that unless some cheaper means of transit was provided by which the cane can be placed in CSR's punts, the farmers considered it is financially impossible to cultivate it.

As an incentive for the CSR loan, the Duranbah farmers undertook to have their cane ready within two to five years. The signatures matched many of the property owners shown on the 1896 and 1907 Cudgen Parish maps, with many scattered around the large plateau at the southern end of Duranbah Rd. This included south of that road's junction with present day Loders Rd, named for cane farmer Arthur Alleyne Loder, one of the signatories. Cane Inspector Dowling's 10 March 1894 letter showed the farmers had made good on their promise to grow cane within two to five years.

What did eventuate was an 18 March 1893 contract 'between farmers and landowners in the district of Duranbah and Stotts Creek' for supplying land for a tramline free of charge. This included main and branch lines for carrying cane from Duranbah to the CSR Duranbah wharf. The farmers also stated they had no claim on said land while such tram was in existence. That condition thus allowed the farmers to reclaim the land if the tramway closed. This March 1893 contract was forwarded to CSR Sydney almost a year later, on 16 March 1894, by Condong mill manager William Isaacs.⁸ Interestingly, cane Inspector Dowling's previously mentioned 10 March 1894 letter to Sydney, with a very vivid portrayal of the inclement weather problems, was sent a week before Isaacs' letter. Perhaps Dowling's letter may have been to 'soften up' CSR's broad room.

Another interesting aspect of Dowling's March 1894 letter to Sydney was it noted that the Duranbah Tramway Committee had not obtained the plans from the government until very recently. That reference to government plans corresponds with a note in the 'Permanent Surveys' section of the 1893-4

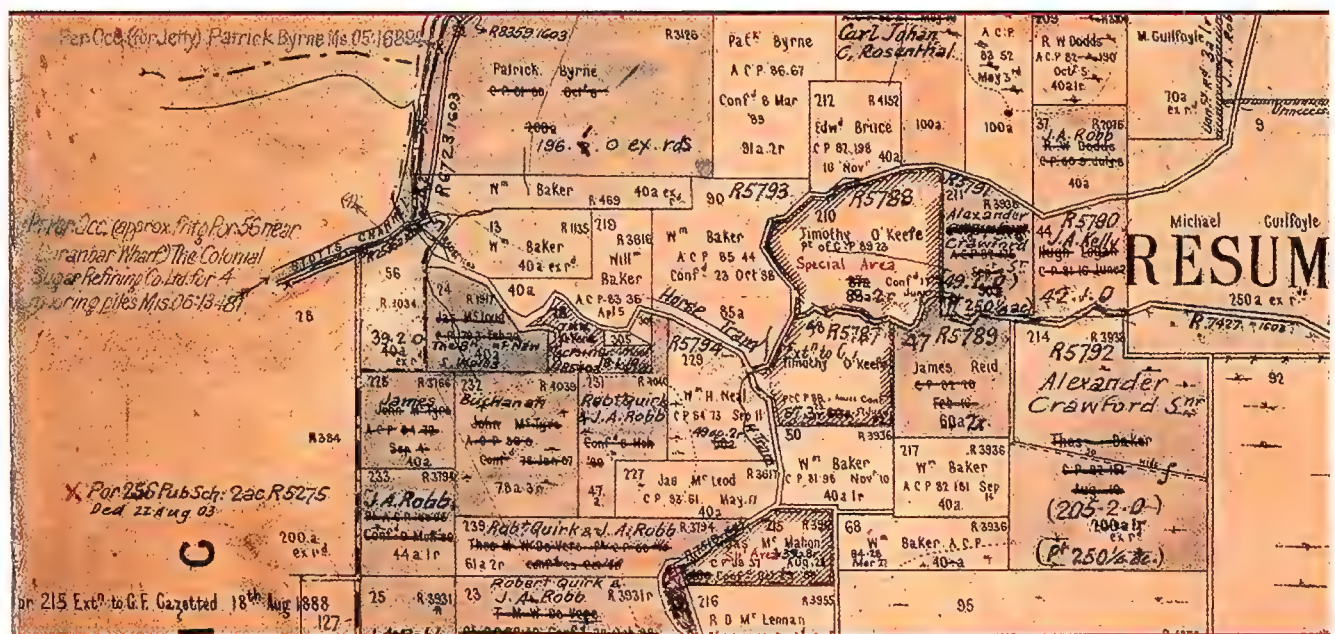
NSW Public Works Dept (PWD) Annual Report. This stated a private line on a 2-foot gauge has been permanently staked for 5 miles 60 chains for the landowners along the Tweed River to Duranbah route. Those government surveys in the PWD Annual Reports can be revealing as both the 1893-4 and 1894-95 ones also refer to a Tweed River to Terranora survey. It noted the permanent survey of a 3-foot gauge (sic) horse-traction line, inclusive of two branches, proposed to be constructed by the land-owners along the route. The PWD report said the line junctioned with what the PWD report termed Mr J Cowan's wire rope tramway. The length was stated as 3 miles 70 chains. More on that PWD extract in a future Terranora Tramway article in *Light Railways*.

Tramway Route

The Duranbah route started at the CSR punt mooring site near Stotts Island, crossed the present-day Tweed Valley Way (formally the Pacific Highway), then climbed beside Cudgen Rd till it met Duranbah Rd at the top of the hill, then generally followed it along the Duranbah Ridge to near its southern end. Along the way it passed the site of the present day 'Tropical Fruit World' orchard style tourist park. The tramway also passed the Duranbah Public School, which predated the tramway. All this is in broad terms only as the present-day road is a much-improved alignment. The 1896 Cudgen Parish map showed the horse line marked as weaving around the road route at the top of the Cudgen Rd climb from the river. At this point Cudgen Rd heads east towards the Cudgen village and the tramway followed southwards along Duranbah Rd.

The 1896 and 1907 Cudgen Parish maps noted the CSR cane punt mooring site, termed 'Duranbah Wharf' on these Parish maps, was located on Stotts Channel fronting Cudgen Parish Portion 56.

Route details were found in the Duranbah Tramway League's 6 July 1894 letter to cane inspector Dowling. The length was shown as 4 mile 53 chains, which translates as 7.5 km and takes the route south beyond Duranbah Rd's junction with Loders Rd. The line's steepest grade was stated as downhill from T O'Keefe's property to the wharf and described as 1 in 46 for a continuous distance of 94 chains (1891 metres). The 1896 Cudgen parish map revealed Timothy O'Keefe



Duranbah horse line corner from 1896 Cudgen Parish map



Duranbah tramway with wagons on portable tracks.

Photo: Tweed Museum M9-20

had substantial property on the junction of Cudgen Rd and Duranbah Rd, just north of the present-day Tropical Fruit World tourist venture at 29 Duranbah Rd. That 1891 metres matches the approximate distance from that road junction near O'Keefe's property downhill to the Duranbah CSR wharf. Of interest is the stated length of 4 miles 53 chains compared to the 5 miles 60 chains in the PWD annual report. Perhaps there were branches in the Loders Rd area, or the farmers decided they did not need the full PWD route.⁹

The 6 July 1894 letter to Dowling also stated the line was laid out to follow the natural contour of the country except in a few cases where a little extra cutting and filling were made to increase the radius of curves. The smallest curve was stated as a radius of 60 links (12 metres) with the explanation given that the 'smallness of which considerably reduced the cost of construction'. The letter said that the road was formed with a minimum width of 10 feet (at 11 feet through cuttings) and when constructed the curves were to be carefully and accurately marked and the rails laid with proper allowance for super elevation of each curve.

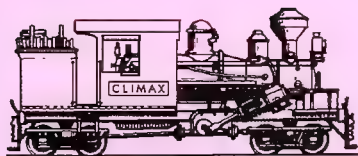
The image of the Duranbah Tramway shows it in typical ridge topography on the 1890s road alignment. Closer inspection of a high-resolution version shows both the road and tramway heading around a bend top left, with the tramway on the lower

route. Perhaps the tramway maintained a more constant grade compared to the steeper road route around the bend.

The image shows the cane wagons are on portable rails with the link to the permanent line on the opposite end to the viewer. The portable rail's jump points onto the permanent track are pointing away from the viewer, suggesting the wharf was to the top of page so the image is looking in a northerly direction. A couple on a single horse drawn vehicle are to the left of the cane wagons. The two men to the left of the cane wagons are loading them from piles beside each wagon. There is a long plank in front of both the front and rear wagons. A small stockyard is behind the tall single tree stump right-centre of image. The tramway goes to the left of the hill the photo was taken from, with the road seemingly to the right, highlighting a location where the tramway did not follow the road reserve.

Wagon Types

This article generally uses the term wagon to refer to both rail vehicles as well as horse drawn vehicles, with the context clarifying if road or rail. It is worth mentioning that documents found in the CSR papers used the term 'truck' for rail vehicles. Animal powered vehicles in this era included drays and wagons for heavier loads with buggies and sulkies for lighter traffic and personal transport.



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MEMBERSHIP RENEWAL

2019 – 2020

Yes, it's that time of year again. Membership subscriptions for the 2019–2020 financial year are now due. The subscription rate for the forthcoming year is again unchanged at \$48.00 – for the **fourteenth** year in a row. It includes six issues of *Light Railways* magazine, numbers 268 to 273. That's right, just \$48 will bring six issues of *Light Railways* into your letter box. (If you prefer the electronic version at \$27.50 see **E.** below.) Every membership is vital to the Society's future and your renewal would be most appreciated. To renew your normal membership you are invited to choose one of the below options – **A.** or **B.**

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The Duranbah farmers' 31 May 1894 letter to CSR¹⁰ outlined the types of rail wagons the Duranbah farmers desired, including a list of items and estimated cost. These included 23 trucks with brakes for £253 and alterations to 17 trucks for £68. The truck total was not stated as such, nor were the alterations specified in this particular letter. A few weeks later, the Duranbah Tramway League's 6 July 1894 letter to cane inspector Dowling, suggested that the bogie (sic) trucks planned for Duranbah, should suit the Caleb Marks of Terranora ones and Duranbah would receive the single (sic) trucks, with brakes, now used by Marks in return. This implied both Duranbah and Marks used wagons with brakes. The 1894 letter used the term 'single' truck in the context of being opposite to bogie, so perhaps 'single' trucks may well be what is also termed a four-wheel wagon with a single axle at each end. Lismore's *Northern Star* of 29 September 1897 associated AA Loder with the statement that the line was four miles of permanent, and one mile of portable tramway. The newspaper also noted the rolling stock consisted of 48 cane trucks with appliances, although the appliances were not specified. The earlier reference to 23 trucks with brakes suggests the remaining part of the 48-truck fleet did not have brakes.

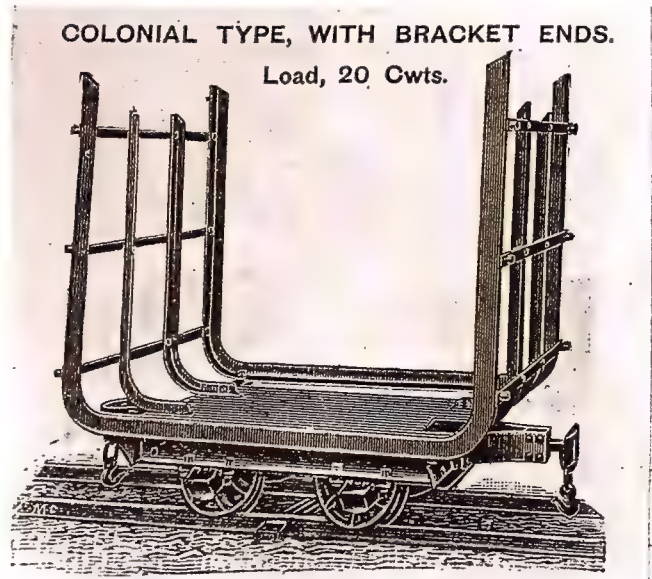
Information on CSR's 19th century use of tramway wagons equipped with brakes, is gleaned from Graham Smith's *Sweet Beginnings: a history of sugar cane growing on the Richmond River of New South Wales, compiled from the letters, reports and people of an ongoing industry*.¹¹ As mentioned earlier, CSR's Broadwater Mill on the Richmond River operated the German Creek tramway. Page 47 of Smith's book includes a 10 October 1884 letter from Broadwater Mill's manager James Wyness to CSR's General Manager Edward William Knox (EW Knox), in which he states that one third of the wagons on the German Creek tramway should have brakes. Remembering the German Creek (Empire Vale) district is that flat area east of the Richmond River south of Ballina, the one third factor for braking power on that flat terrain, suggests a higher percentage of brake equipped wagons would be needed for the steeper Duranbah Ridge trams. In that case, the stated Duranbah total of 23 braked wagons out of 48, about half, may be plausible.

Wyness noted the method of applying the brakes was not the handiest (sic). Above the platform on which the horse driver stood there was a ratchet wheel standing up about an inch, and this was the only means at the driver's command of applying the tramway wagon brake. Unfortunately, mill manager Wyness' 1884 description did not reveal if that ratchet wheel device only worked on the driver's wagon or had a chain or rope link through to any other wagon with brakes in that tram load. It also did not reveal if the driver's platform was a permanent part of that wagon or could be moved to the wagon on the other end for the return trip.

Researcher John Browning has noted cane trucks with bogies did not see substantial general use in Australia in that era, so might be regarded as unconventional. Bogie wagons were often used by sugar mills for the transport of bagged raw sugar and large items such as machinery. Vehicle brakes were perhaps irrelevant to Marks' self-acting incline as the machinery probably used a brake associated with the winch machinery, but brakes may have been useful on the line beyond the incline.¹²

The CSR Tweed Letter Book also revealed that another Terranora farmer, Thomas Fraser, wrote a letter to Condong mill manager William Isaacs on 30 March 1895.¹³ As well as asking for not less than 20 chains (402 metres) of wire rope in one length for his self-acting incline, Fraser also described the type of desired trucks as like the type used by Marks.

More to the point, Fraser's letter included an image which he said was taken from 'Fowler's Catalogue' which labelled the wagon as 'Colonial Type, with bracket ends, load 20 Cwts'. As the included image of this wagon does not show obvious brakes, perhaps Fraser was referring more to the 20 Cwts (one ton) load capacity and the fact the wagon had cane restraining frames on the ends. The Duranbah wagon swap letters were mid-1894 and Fraser's letter was 1895, so what Fraser was noting as Marks' wagon, could resemble either the original Duranbah or Marks wagons, depending on whether the Duranbah wagon swap took place. The reference to Fowler's Catalogue would perhaps refer to John Fowler and Company of Leeds UK.



One ton capacity cane wagon from mid 1890s Fowler Catalogue

The number of tramway wagons implies more than one tram was in use at one time, which suggests crossing loops for trams to pass each other. It also suggests a supervisor to organise where trams passed the opposite direction trams. As the Duranbah line was not directly connected to the Condong mill, the Duranbah fleet storage and maintenance facilities would have to be large enough for a fleet of that size. While research to date has not identified the depot location, one possibility was the flatter area near the wharf. This had the advantage of ready access for river barge transfer to the mill for any heavier repairs. Horse stables would be required at the depot.

The total daily tramway tonnage would be around 48 to 50 tons, if we accept that the wagons were similar to the one-ton capacity Fowler catalogue wagons, and each of the 48 wagons did one trip per day. If each did two trips then the line produced 100 tons per day. If they used wagons with two-ton capacity, then they could double the line's capacity. These are nominal totals only as there would be variations as not all wagons were loaded equally and some wagons from farms close to the wharf may have managed more than one trip a day. Cane Inspector Dowling predicted 6000 tons for 1894. At 50 tons a day line capacity, 6000 tons would require 120 days, so 50 tons per day was feasible.

Duranbah Wharf

This research revealed some interesting material about the interaction of CSR sugar tramways and CSR punts including that the Duranbah wharf probably had a permanent weighbridge type structure at the tramway wharf sidings.

The point of all this was CSR's accounts staff made farmers' payments based on records of individual farmers' actual production, so it needed to be weighed. The usual method of transporting cane along the waterways was a string of punts hauled by a tug. CSR's 4 June 1945 list¹⁴ for all the NSW mills shows Harwood Mill with 41 punts, Broadwater Mill with 52 and Condong Mill with 37. Harwood and Broadwater had five tugs each and Condong was listed with three tugs on CSR's 1942 list.

Condong mill used two different punt load weighing methods. One involved a gauge on the punts for the usual individual farmer's riverside loading derricks, with the cane coming from their own paddocks on drays or portable tramways. The fact the load measuring in these situations was done on return to the mill shows only the cane from one farmer in each punt. The other load measuring method applied to the high-volume Chinderah CSR wharf where tram loads of cane from different farms were loaded into the same punts. This required the load of individual wagons being weighed and recorded at the Chinderah tramway weighbridge. The evidence shows the earlier Duranbah tramway wharf, for the same reason, also had a tramway weighbridge.

Back to the punt tonnage gauge for cane from farmers' individual tramways; this measured the change in the punt's displacement due to the cane load, according to the Archimedes Principle. Of course, farmers and CSR had their own different interests to protect and so it was the *Clarence and Richmond Examiner* (Grafton) of 10 May 1904 noted Harwood mill growers and CSR discussing the gauging of the displacement of the punts' hulls. The following brief outline of the punt displacement measuring process is also sourced from Graham Smith's *Sweet Beginnings: a history of sugar cane growing on the Richmond River of New South Wales, compiled from the letters, reports and people of an ongoing industry*.

Smith's book notes CSR's original intention was for external graduations on the punt's hull, but, in a letter to CSR's Darkwater mill, dated 29 August 1870, CSR's then General Manager, Joseph Grafton Ross, said that the sinkage of the punts during loading would be too small to permit the external marks to provide sufficient accuracy. The chosen method was to install a four-inch diameter vertical pipe at each end of the punts through to the water. A calibrated float type gauging device was inserted down the pipe at each end and the results cross referenced against the individual punt's calibration table. The mill's 'punt gauger' staff member would measure the loaded punt on arrival at the mill and then redo the same punt after emptying before it left the mill for its next trip, thus determining the actual cane load. The measuring of the loaded and empty values at the same location, the mill, meant the river salinity factor was fairly constant. Smith's book describes more details such as ensuring the punt was free of other items, including water and rubbish that would give false readings etc. Readers seeking more details are referred to the section starting on page 311 of Graham Smith's book, which is a wonderful history of the sugar industry in that region.

The indication that CSR's Duranbah tramway wharf at Stotts Creek had a weighbridge, was revealed by Cane Inspector Russell Dowling, in a 10 November 1911 letter to CSR's General Manager.¹⁵ In this letter Dowling noted it would need to build a weighbridge at the former Robb & Co's Chinderah wharf, following the sale of the Robb & Co operations to CSR. Item 8 of Dowling's letter said, '..... with regard to the delivery of cane to wharf. It is possible the weighbridge will have to be used, as the cane may have to be mixed in the punt, the same way as was done at Stott's Creek.' Dowling's 1911 letter was proposing a weighbridge at Chinderah similar to what he knew was at Stotts Creek, thus confirming a weighbridge at the earlier Stotts Creek Duranbah tramway wharf.



Cane barges on the Tweed River heading towards the Condong Mill. Note the displacement measuring tube in the front of the barge.

Photo: Ross Johnson, 1956

Since the mill organised the river tugs and punts to each loading point according to what the mill knew the farmer was cutting that day, CSR already had a good idea of the expected tonnages each farmer would supply each day. In the same way, the mill would have overseen the number of wagons allocated to each Duranbah Tramway farmer. It would have been a simple clerical matter to cross check the expected farmers' output against the actual tonnages received and adjust accordingly. CSR's accounts staff also used the sugar content to determine farmer's payments. Conversation with Tweed sugar industry identities from the tramway and punt era, reveals the sugar content aspect of the farmers' payment was determined by the cane samples individual farmers had sent in separately for analysis.

How Long did it last?

Exactly how long the tramway operated is open to further research, although we have a few clues. CSR's record collection in the Noel Butlin Archives Centre contain a document on a CSR letterhead, dated 30 November 1972, titled 'History of CSR On Tweed River'.¹⁶ It indicated Duranbah cane growing was discontinued due to the high cost of transport but did not give a date for the final harvest. The previously mentioned Lismore's *Northern Star* newspaper of 29 September 1897 interview with AA Loder clearly showed the tramway was still in operation at that time. Perhaps a concise history of the Duranbah sugar tramway is found in Loder's obituary in the *Queenslander* of 28 February 1929. It states that after growing sugar cane for some years, Loder went in for dairying, and at one time had as many as five dairy farms on his property. This writer suspects these farms were operated by share farming tenants.

One probable time frame indicator for the demise of Duranbah cane growing was that the *Sydney Mail and New South Wales Advertiser* of 27 November 1897 stated that the River Tweed Creamery Butter Company (sic) had opened in Commercial Road Murwillumbah. This started as a proprietary company and in 1905 reformed as a cooperative and amalgamated with Norco in July 1929. The standard Norco history text, Maurice Ryan's *Norco 100: a century history of Norco, 1895-1995*, has the name as *Tweed River Cooperative Butter Company* although that name was obviously the cooperative version.¹⁷ The swapping of the name River Tweed and Tweed River, as well as tidying up the 'Creamery Butter' aspect, is interesting. That Norco history book also reveals AA Loader (sic) as the first Chairman and Isaac McIlraith was the manager. A depot of what eventually became known as Norco also was opened in Murwillumbah in 1897 and enlarged as a factory in 1906. Clearly, with two competing butter factories in Murwillumbah, sugar cane farmers realised they could 'grow cows' instead of cane and get regular dairy payments. The sugar payment relied on a yearly harvest, provided frosts did not damage the crop. Farmers also soon realised they could transport cream to market a lot easier than numerous wagons of sugar cane. *Pearson's 1906 NSW Road Map* (downloadable from Trove) shows a convenient road south west from the Duranbah southern plateau down to the Condong sugar mill and through to Murwillumbah. Present day Eviron Rd has a similar route, down the hill and across the river flats to the sugar mill and onwards to Murwillumbah.

Several site inspections have so far not revealed tramway remnants, remembering the road along the route has been realigned and so bulldozed a few times. The area near the Stotts Channel wharf site was heavily cleared in the 1920s for the development of what became the Pacific Highway.

Portions of this road were laid in concrete near the wharf area, with lengthy wide concrete remnants still visible in the nearby Scotts Island Nature Reserve picnic area.

Acknowledgements

Thanks are extended to the following who assisted with this research; John Browning, Susan Cokley, Denise Garrick, Immy McKiernan, David Mewes and Ross Johnson. Also, thanks to members of the Tweed Heads Historical Society, which is part of Tweed Shire's Tweed Regional Museum at Murwillumbah, whose professional staff, including Erika Taylor and Kirsty Andrew, have answered my many questions. Grateful thanks are extended to Ian McNeil for the preparation of the excellent maps that accompany this article.

Noel Butlin Archives Centre References

Some CSR research notes, including portions of CSR's 'Tweed Letter Book', other notes, plans and images, are part of the writer's collection. These are originally from several sources who made research trips to CSR's record collection in the Noel Butlin Archives Centre at the Australian National University, (NBAC). The main NBAC reference for this Duranbah article is Z303 Box 37, seen written as Z303/37 on some photocopied NBAC files. Some other CSR material is from deceased estates etc and may have come from other boxes and thus the actual NBAC box reference can no longer be confirmed and so is not specified.

Endnotes

1. NBAC Z303/box 37 (142.3362)
2. All CSR Tweed Letter book references for this article from NBAC Z303/box 37
3. NBAC Z303/box 37
4. List of lands purchased by Robb & Co. *The Queenslander* 29 July 1882 p.3 <http://nla.gov.au/nla.news-article19785713>
5. Cudgen, Tweed River. *Australian Town and Country Journal* (Sydney) 11 Nov 1882 p.39 <http://nla.gov.au/nla.news-article70992769>
6. The handwritten December 1882 Robb & Co partnership agreement, courtesy Tweed Regional Museum.
7. NBAC Z303/box 37 142.3362
8. NBAC Z303/box 37 142.3358
9. NBAC Z303/box 37 142.3362
10. NBAC Z303/box 37 142.3362
11. Smith, Graham. *Sweet Beginnings: a history of sugar cane growing on the Richmond River of New South Wales*, compiled from the letters, reports and people of an ongoing industry. Self-published, Graham Smith, East Coraki NSW 1991
12. Browning, John. Personal communication 2019
13. NBAC Z303/box 37 142.3359
14. NBAC Z303/box 37 NS96
15. NBAC Z303/box 37 (C1.0/6.3/6)
16. NBAC Z303/box 37 NS94
17. Ryan, Maurice. *Norco 100: a century history of Norco, 1895-1995*, Norco Co-op Ltd, Lismore, NSW, 1995

LRRSA Online Discussion Group

Have you joined the LRRSA's email discussion group yet?

See:

<https://groups.io/g/LRRSA>

and click on

"Sign Up"!

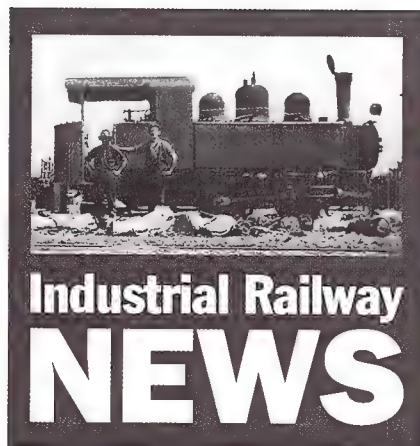
and the

Light Railways of Australia Facebook Group ?

You will find the group here:

<https://www.facebook.com/groups/LightRailwaysAustralia/>





Please send contributions to:
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e-mail: industrial@lrrsa.org.au

Special thanks to contributors to the *Sugar Cane Trains/Navvy Pics 2ft Facebook page*.

QUEENSLAND

DOWNER EDI, Maryborough

(see LR 266 p.27)

1067 mm gauge

An ex Emu Bay Railway, Tasmania 1100 class Walkers B-B DH is said to have been purchased by this firm from Cairns Kuranda Rail Services of Cairns. It will be restored and used for shunting as backup for Walkers B-B DH DH73 *Hugh Boge* (718 of 1974). Eric Perkins 4/19

ISIS CENTRAL SUGAR MILL CO LTD

(see LR 266 p.27)

610 mm gauge

This mill's two ballast hoppers have been repainted and fitted with pneumatically operated doors, air

for which is piped through from the locomotive. Colours have remained the same with black frames and yellow hoppers but the ends now have red and white stripes in the same style as the mill's locos. EM Baldwin B-B DH 10 (7267.1 6.77 of 1977), the navy loco, was seen with them near Childers on 20 February and at the mill on 10 March. Walkers B-B DH 2 (598 of 1968 rebuilt Walkers 1994) was seen stabled with the poison train at Farnsfield on 16 February. Walkers B-B DH 3 (600 of 1968 rebuilt Walkers 1994) was also seen out in Farnsfield on the same day. The Plasser KMX-12T tamping machine (414 of 1995) was out on the Gregory line on 17 February. During the 2018 slack season, the New Valley line was extended approximately one kilometre

towards Woodward Road and a siding named Brickwood built at the terminus. The New Valley truck dump at the previous terminus has since been removed.

Brian Bouchardt 2/19; Ben Glossop 3/19; Josef Menich 3/19; Isis Central Sugar Mill Co. Ltd. 6/18

MACKAY SUGAR LTD, Mackay mills

(see LR 266 p.27)

610 mm gauge

Com-Eng 0-6-0DH 22 *Pinnacle* (AA1549 of 1961) was seen at the Pioneer River bridge at Mirani on 30 March. The bridge is being rerailled and the loco was being used to move round an air compressor mounted in a cut down 4 ton bin. Clyde 0-6-0DH 13 *Devereaux* (67-568 of 1967) was running a rail train



Above: Marian Mill's *Devereaux* (67-568 of 1967) with a rail train on the Allandale line on 29 March. Photo: Mitch Zunker

Below: Farleigh Mill's EM Baldwin B-B DH Foulden (7220.1 6.77 of 1977) crosses Eungella Road with a ballast train headed back to reload at Pleystowe on 21 March. Photo: Steven Jesser

Left (page 24): Tully Mill Walkers B-B DH 4 (622 of 1969 rebuilt Walkers 1996) about to pass under the Bruce Highway south of Tully on 30 October, 2014. Photo: Luke Horniblow



on the Allandale line on 29 March. EM Baldwin B-B DH locos *Foulden* (7220.1 6.77 of 1977), *Mia Mia* (9815.1 10.81 of 1981) and *Inverness* (10123.1 5.82 of 1982) have seen use on ballast trains this slack season. Marian Mill's Walkers B-B DH locos *Tannalo* (705 of 1972 rebuilt Bundaberg Foundry 1995) and *Netherdale* (699 of 1972 rebuilt Walkers 1997) have been fitted with pneumatically operated couplers this slack season and are the last Mackay Sugar locos of this type to be so fitted. Work continues on the final section of the connecting line from Racecourse Mill to Farleigh Mill's Palms line and by April, the formation was completed with a ballast bed being laid prior to track laying. Until this link is completed, the loco workshop at Racecourse Mill is isolated and several locos have already been road hauled to Pleystowe for commissioning runs. Tom Badger 3/19; Steven Jesser 3/19; Mitch Zunker 4/19

MACKAY SUGAR LTD, Mossman Mill

(see LR 266 p.27)

610 mm gauge

Some years ago, the rear end of Com-Eng 0-6-0DH *Mossman* (B1719 of 1957) was fitted with a removable elevated platform for trimming lineside trees.

Luke Horniblow 4/19

MSF SUGAR LTD, Mulgrave Mill

(see LR 266 p.27)

610 mm gauge

New 6 tonne bins were seen in a rake of empties at Hussey Road on 2 September. The Plasser KMX-06 tamping machine (98 of 1975) was seen in the navy yard on 23 February. It has not been used for some years and an attempt to run it in 2016 was aborted when a hydraulic hose blew. Mulgrave has eight ballast hoppers, four new build from Capitol and four CSR type inherited from Hambledon Mill. Of these eight, just one or two of the ex Hambledon hoppers are in use, one of which was seen with Com-Eng 0-6-0DH 6 (A1006 of 1955) at a relay on the main south line at Bowens Hill on 23 February. The practice at this mill is to truck ballast close to the job and then run it using just the one hopper. The status of EM Baldwin 0-6-0DH 11 *Maitland* (4413.2 8.72 of 1972) has remained unchanged since July 2018 and on 23 February, was still minus wheelsets, running gear and final drive. Parked next to it near the loco shed was Com-Eng 0-6-0DH 3 (A1003 of 1955) with its engine bay now gutted.

Gregorio Bortolussi 9/18; Luke Horniblow 2/19; Danny Nolan 3/19; Andrew Sues 2/19

PROGRESS RAIL SERVICES, Redbank

(see LR 260 p.24)

1067 mm gauge

Clyde Co-Co DE 1720 (66-502 of 1966) was seen shunting locos around on 26 February and 20 March. Leon Harris 2/19, 3/19

RIO TINTO ALCAN, Weipa

(see LR 234 p.23)

1435 mm gauge

Clyde Co-Co DE R1.001 (72-752 of 1972) was sold in 2011 to Australian Loco Lease who



Top: Mackay Sugar's bogie brake wagon 5 (built by Racecourse Mill in 1995), repainted at Racecourse Mill this slack season and seen at Pleystowe early in April. Photo: Mitch Zunker **Centre:** Com-Eng 0-6-0DH 6 (A1006 of 1955) with an ex Hambledon Mill ballast hopper at Bowens Hill on Mulgrave Mill's main line south on 23 February. Photo: Luke Horniblow **Above:** EM Baldwin 0-6-0DH 14 (6/2490.1 7.68 of 1968) was the truck shop shunter at Macknade Mill for a while this slack season. On 22 February, it is seen outside with some serviced cane bins and next to a line up of new bogies. Photo: Luke Horniblow



Com-Eng 0-4-0DH Invicta (CA1040 of 1960) with a couple of loaded hoppers ready to run ballast on the relay between the Invicta Mill yard and the Haughton River bridge on 4 March. Photo: Luke Horniblow

renumbered it to L277. In mid February of this year, Slattery Auctions had it for sale by tender auction. Wikipedia accessed 4/19; Slattery Auctions & Valuations 2/19

WILMAR SUGAR (HERBERT) PTY LTD, Herbert River Mills

(see LR 266 p.27)

610 mm gauge

EM Baldwin B-B DH *Selkirk* (6750.1 8.76 of 1976) returned to Kalamia Mill during February or March from being on loan to Victoria Mill. EM Baldwin 4wDM *Sugarworld Shuttle* (9109.1 9.80 of 1980) was seen in the Abergowrie area with the new poison train on 2 March. The new setup was built at Victoria Mill using two redundant sugar box frames and their bogies. One wagon carries a water tank and the other carries the spray gear, the spray tank and another water tank. As well, the light truck used for spraying sidings has been fitted with spray booms replacing the single spray head previously used. Clyde 0-6-0DH *Canberra* (65-433 of 1965) has remained in the Macknade area on navy duties up into April.

Editor 4/19; Luke Horniblow 2/19, 3/19

WILMAR SUGAR (INVICTA) PTY LTD, Invicta Mill, Giru

(see LR 266 p.29)

610 mm gauge

Work continued on the rebuild of Walkers B-B DH *Cromarty* (708 of 1973 rebuilt Bundaberg Foundry 1996) at the Pioneer Mill workshop in March. The line between the mill yard and the Haughton River bridge has been relaid this slack season and Com-Eng 0-4-0DH *Invicta* (CA1040 of 1960) was seen in attendance on 4 March and 1 April. Some of the ballast hoppers and the ballast plough were on loan to Kalamia Mill this year and returned early in March.

Shane Yore /19; Luke Horniblow 3/19, 4/19

WILMAR SUGAR (KALAMIA) PTY LTD, Kalamia Mill

(see LR 266 p.29)

610 mm gauge

EM Baldwin B-B DH *Selkirk* (6750.1 8.76 of 1976) returned from being on loan to Victoria Mill during February or March. Com-Eng 0-6-0DH *Chiverton* (C1030 of 1958) was seen with the Invicta Mill ballast train at Bombals Junction on 4 March on its way back to the Invicta area following washout repair work on the Kalamia system.

Luke Horniblow 3/19; Editor 4/19

WILMAR SUGAR PTY LTD, Pioneer Mill, Brandon

(see LR 266 p.29)

1067 mm gauge

A report in the previous issue was incorrect and Walkers B-B DH *Jerona* (647 of 1970) is not being rebuilt this slack season. Rather, one of the ex QR DH class Walkers B-B DH locos stored here is being rebuilt for Pioneer and was stripped back to bare frames. Walkers B-B DH *Cromarty* (708 of 1973 rebuilt Bundaberg Foundry 1996) was still on site in March and being rebuilt for Invicta Mill. Also present in the workshop was another Walkers loco frame with an unknown destiny.

Shane Yore 3/19

NEW SOUTH WALES

BLUESCOPE STEEL LTD, Port Kembla Steelworks

(see LR 265 p.27)

1435 mm gauge

Pacific National's National Railway Equipment Bo-Bo DE PB7 (209-PB7 of 2014) was seen shunting at Cringila on 10 March.

Richie Stalling 3/19

GRAINCORP LTD, Carrington Bulk Grain Terminal

(see LR 165 p.18)

1435 mm gauge

The two Vollert 4wDHS locos known as "Blue" and "Red" (both 80/009 of 1980) are believed to have received major overhauls this year.

Brad Peardon 3/19

VICTORIA

HARDCHROME ENGINEERING SERVICES, Yallourn

(see LR 160 p.21 for Skilled Engineering)

900 mm gauge

Hardchrome Engineering Services is the successor to a range of firms at this site which apparently include Elliott Engineering, Mechanical Engineering Corporation and Skilled Engineering. Their workshop is at the site of the Yallourn terminal of the former SEC Interconnecting Railway. Fowler 0-6-ODM 1 *Pride of Yallourn* (4210049 of 1951) is used to move heavy gear around on the internal rail system. Malcolm Moore 0-4-ODM (36 of 1949) was also here but is believed to have been moved off site in 2012 or later. Possibly, it is in the possession of the former owner of Elliott Engineering.

Zec Murphy 3/19; Robert Ashworth 3/19; Brenden Vosper 3/19; Walhalla Goldfields Railway 3/19; Peter Evans 4/19

WESTERN AUSTRALIA

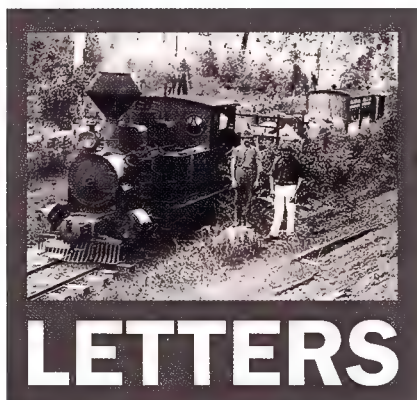
COCKBURN CEMENT LTD, Parkeston

(see LR 262 p.36)

1435 mm gauge

Goninan Bo-Bo DE 49 (013 of 1961), the resident shunting loco here, was seen at work in mid March.

Walter Rowe 3/19



Robb and Co's Cudgen sugar operations (LR265)

Thank you for another interesting read in the February 2019 edition of *Light Railways*.

From August 1957 until 1962 I served an Electrical Apprenticeship with the CSR at its Pyrmont Refinery in Sydney. The Colonial Sugar Refining Company as it was then known, had a large footprint on the shores of Johnstons Bay at Pyrmont. A large industrial complex that included its own power station plus impressive engineering facilities.

Adjacent to the electrical shop was the well equipped boiler maker's shop, and there was not much these boys could not manufacture or repair. It was an interesting place for an inquisitive teenager.

One of its duties was to manufacture sections of cane-field tram tracks. Outside the workshop was a set of large rollers where the curved sections were rolled from 20-24 ft straight lengths of track. Sections, both straight and curved were predrilled for fishplates, assembled with sleepers / spreaders then painted with a black bituminous paint. As the number of sections grew, these would be relocated onto the company wharf for storage and await shipping to the cane fields of Northern NSW, Queensland or Fiji as the need arose. Occasionally sets of points were manufactured but these were quite rare, hence the "jump points" as shown in the photo on page eight. When assembled and stored, these piles of tram tracks reminded me of my old Hornby "O" Gauge tracks that frequently wound its way through our Sydney suburban home at Sefton when I was just playing trains.

At Sefton as a young lad I had a grandstand view of the Sefton Park junction. Motive power of the day was 32, 36, 38's for the passenger trains and the standard goods engines. Plus the big engines, 57, 58's, occasionally a 59. Later the 60 class Garratts and 4501 "The Green Beetle" electric on Glenlee coal trains. Then came the diesels, 40, 41, 42, 43, 44's and so on. Just fabulous!

Engineering equipment and Cane Field tram tracks would be shipped out on the company bulk sugar ships that supplied the refinery with bulk raw sugar for the refinery and molasses for the distillery.

Bob Quinn
Launceston
Via email

Robb and Co's Cudgen sugar operations (LR265)

The Editor asked me if I wished to respond to Bob Quinn's letter. I was overjoyed that a reader had taken the time to send detailed material on the track manufacturing details from deep inside CSR Pyrmont's boilermaker's shop.

As Bob noted, the tracks were sent to Northern NSW, Queensland or Fiji as the need arose, so those staff members had a pivotal role in the operation of CSR's tramways. We know in 1921 Pyrmont produced the Cletrac (Cleveland Tractor Co) locomotive intended for CSR's Crabbes Creek NSW line, so we know the employees were quite capable of design and manufacture.

Are there any other former CSR staff, at both Pyrmont or other CSR workshops, such as local mills, that would like to add more? The possibilities include a letter to the Editor, or an article, either brief or longer. Another alternative is the 'Looking Back' section of *Light Railways* on the inside back cover similar to the February issue example based on concrete dam tramways. The crews of CSR's bulk sugar ships would have seen interesting things, and better still if they took pictures.

The attached image of a horse hauling its load of no doubt Pyrmont manufactured cane field tracks, illustrates the result of the work of Bob Quinn and his colleagues. Also, of note is the jump points in the foreground. This is a 1934 image by Syd Adams via his nephew Ross Johnson and is available from the Tweed Regional Museum, Murwillumbah.

I did enjoy Bob Quinn's analogy that the piles of tram tracks reminded him of his Hornby "O" Gauge tracks. I would also have loved to have witnessed those Sefton Park junction trains, as I just love trains, regardless of gauge and ownership.

Peter Cokley
Via email



Horse haulage on temporary sugar cane tramway track, northern NSW. Note the 'lay-over' (or 'jump') points.
Photo: Syd Adams, Tweed Regional Museum, Murwillumbah

The Clarence River Breakwater (LR 262)

Regarding the Hercules locomotive referred to in the Clarence River Breakwater story, have any readers seen the following advertisement from the *Sydney Morning Herald* of 16 September 1893 – page 12 column 4:

Tank locomotive for sale, double cylinder, 4 wheel, coupled, Government gauge.
Locomotive, Box 968, GPO, Sydney.

The locomotive would have to be a possibility for the Hercules at the Clarence River site. Could this be one of the three small locomotives mentioned as being made on the line by Messrs Larkin and Waterford for its permanent way contract GSR 1863?

Also, there is another small locomotive that appears to have gone unidentified, or perhaps I have missed it in my research. I refer to the following advertisement which appeared in the *Newcastle Chronicle* on 14 February 1871 on page 1 in column 4:

FOR SALE,--- A LOCOMOTIVE [English make], about 10 tons weight, 11 cylinders, in thorough working order. Apply P. Higgins, Royal Hotel, Sydney.

The above P Higgins is probably Patrick Higgins, a railway contractor after his #5 contract on the Great Western Railway.

Any further information on these locomotives would be very much appreciated – please forward any responses via the Editor.

Garry Allen
Via email

"Tom Thumb" locomotive (LR 242)

Some time ago I wrote suggesting that the two "missing" Great Cobar Fowlers might have gone to Barbados in the West Indies while labouring under the delusion that Barbados was in Barbados. I now know that

Carbadas is in Chile, which may well be a good place to start looking instead. Richard Horne was right to question Barbados as a highly unlikely place for the missing Fowlers to have gone to, despite as we speak, a 2 ft 6 in gauge railway being established there.

Ron Madden
Wagga Wagga
Via email

Robb and Co's Cudgen sugar operations (LR265, and letter in LR 266)

The April issue of *Light Railways* was once again full of interesting material. I note Peter Evans' letter regarding the valve gear being in reverse on the CSR Chinderah wharf sidings. That letter refers to CC Singleton's 1937 image at CSR's Chinderah wharf sidings, in which he observed that the slide block on the Joy valve gear of Fowler 6554 of 1891, was in full reverse position. Following further analysis of the implications of that observation, it was considered possible that CC Singleton took that image while the Fowler was stationary during uncoupling from the cane wagons. That would explain the reverse gear as the driver may have used the uncoupling time to place the locomotive in reverse through the points and then run forward into the parallel siding ready to receive the empty wagons from the wharf. The cane wagons were then cable winched over the weighbridge and to the wharf, as seen in CC Singleton's companion image on P.12. The driver's attention might be on his load, as Peter Evans observed, so as to ensure the cane load was uncoupled. He may also have been watching something within the Fowler's cab.

Peter Cokley
Via email

Response from Peter Evans

I have been driving one of those Fowlers with Joy valve gear at Alexandra for 30+ years. When the top of the slide block lays back the locomotive is definitely in reverse

gear. The further back it lays back the longer the cut-off (ie, more power, less efficiency). Similarly, when it lays with the top forward the locomotive is in forward gear. You are better placed than me to understand the operation of the line, all I can tell you is the locomotive valve gear was positioned to run cab first when that photo was taken. Perhaps the locomotive was stationary and the driver was about to put her into forward gear? However, with care and slow speed that operation can be done while the locomotive is still moving.

WW1 Surplus and memorialised locomotives (Letters LR 264 & 265)

In LR 265, Trevor Edmonds expressed a wish to see any primary references that directly connect the four BHAS locomotives to the British war effort. I believe that my letter in LR 264 showed that no such references will be found, as the primary reference, Andrew Barclay's order book, clearly shows that the order came directly from BHAS.

Trevor is correct in stating that the ROD was not the operator of the 60 cm gauge railways, it being the Directorate of Light Railways (WDLR).

However, the attached photo of WD 311 (Hunslet 1223/1916) is curious in that it is lettered LROD, the only instance of this that I have come across.

Richard Horne
South Croydon
United Kingdom

Looking Back (LR 266)

The lower photo of the Torrens River improvement works is one of a number of which I have original prints. On the reverse are 'Shepherdson' and 'Courtesy Clem Hooper'. The two-seat tourer car, with a dickie seat in the boot, has the registration number SA 136 158, which may help determine the earliest date that the photo could have been taken. A view showing the front of it, together with *Mabel* is attached. The scheme appears to have been carried



Hunslet 4-6-0T locomotive with the unusual LROD lettering, as described in Richard Horne's letter above.



MEETINGS

ADELAIDE: "More movies on Tasmanian railways"

After the usual business, we will view more movies by John Meredith of Tasmanian railways. News of light rail matters will be welcome from any member. Intending participants would be well advised to contact Les Howard on 8278 3082 or by email lfhoward@tpg.com.au, since accommodation is limited.

Location:

1 Kindergarten Drive, Hawthorndene.

Date: Thursday 7 June 2019 at 7.30pm

BRISBANE: "Industrial railway DVDs"

Col Rough will be showing some of his DVD's on Industrial Railways.

Location: Coopers Plains Library, 107 Orange Grove Road, Coopers Plains.

Date: Friday 21 June 2019 at 7.30pm

MELBOURNE: "To be advised"

At the time of publication the meeting details were not finalised. Full details are given in the members supplement posted with copies of the magazine. Details will also be given on the LRRSA website (www.lrrsa.org.au) and the Facebook page *Light Railways of Australia*.

Location: Ashburton Uniting Church Hall, Ashburn Grove, Ashburton.

Date: Thursday 13 June 2019 at 7:30pm

SYDNEY: AGM and the 3 foot industrial tramways of the Mudgee line.

The AGM will take but a short duration of time and then Jeff Moonie will present his meticulous research into the numerous narrow gauge tramways of the various industries along the Mudgee railway. At one time there was an industrial undertaking (coal, cement, limestone, iron ore) every few miles along this once very busy railway.

Location: Woodstock Community Centre, Church Street, Burwood. Free Council car park behind building (entry via Fitzroy Street) or close-by street parking. Only 10 minutes easy walk from Burwood railway station.

Date: Wednesday 26 June 2019 at 7:30pm

out under the auspices of the S A Lands Department, but with the S A Engineering & Water Supply Department actually doing the work. I suggested to fellow LRRSA members that the location was in the parklands north west of Adelaide, but subsequently have come to the opinion that the sharp bends in the river relate more to locations further downstream, in the Underdale area.

Richard Horne
South Croydon
United Kingdom

Ash disposal tramways in NSW (LR 266)

I greatly enjoyed reading Jim Longworth's article in the April issue of Light Railways. Readers might be interested to know that the ash disposal skip from Cullen Bullen has survived and was moved in 2015 from Peter Neve's Weavering Light Railway at Loftus to his new venture, Pete's Hobby Railway at Junee. After the dieselisation of the Gwabegar line the skip became redundant and my wife Pat purchased it to assist me in excavations under our then Balgowlah Heights home.

After completion of those works we passed the skip to Peter for use on his railway at Loftus. Whilst there it received repairs to the floor of the body.

The attached photo (right) shows the skip at Loftus being readied for the transfer to Junee. Peter advises me that the skip is actually 600 mm gauge so a touch under 2 foot gauge. Readers who are interested can follow Peter's adventures in establishing his Hobby Railway at Junee on FaceBook page Pete's Hobby Railway and website <https://www.peteshobbyrailway.club/welcome/welcome-to-petes-hobby-railway/> and then searching.

Terence Boardman OAM
Via email



Above: Locomotive Mabel on Torrens River improvement works (see letter from Richard Horne).

Below: Ash disposal tramway skip with James Silver (left) and Zane Maber (right). Photo: Peter Neve



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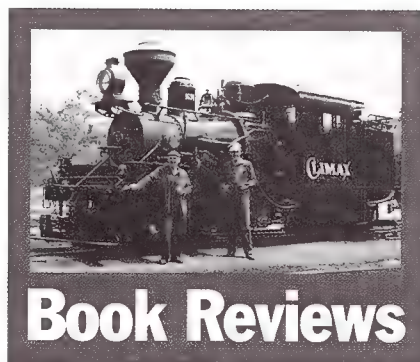
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The Steam Tram in Australia and New Zealand

by Bruce Macdonald

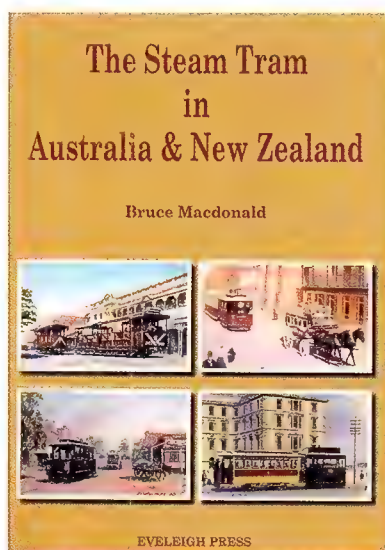
Published 2018 by Eveleigh Press
184 pages portrait format A4 size with a hard cover. There are many photos, most are black and white, and there are 16 maps of the various steam tram systems.

Available from the LRRSA online bookshop - \$70.00 plus postage (\$63.00 plus postage for LRRSA members) – weight is 1.1 kg.

This book is not a history of the various steam tram systems in the two countries but a coverage of the various steam tram motors, as the steam tram locomotives were known, that were found in service until the systems were electrified or shut down in favour of buses. Where possible, every type of steam tram motor is shown in photographic or illustrative form, in some cases also showing the modifications applied. Photos have been drawn from many sources and are well reproduced; restored trams are shown in colour. Most Australian systems are accompanied by a clear and detailed map, drawn by Lindsay Bennett, showing where they ran.

The author is well known and respected rail historian and rolling stock restoration expert Bruce McDonald. Bruce is the ideal author for this book given his background knowledge of the subject and the fact that he built a live steam 5-inch-gauge model of locomotive number 103 from the late 1940s to 1952. His interest in steam trams came from living near the Kogarah

line where his parents would take him for a ride in the tram towed by one of the many steam motors used on the system. In April 1953 he was then offered the real 103 in a very dilapidated condition and he then proceeded to restore it in his back yard at Glanville in Sydney. He spent many hours restoring it with other like-minded enthusiasts until it was complete and in an operating condition in 1967. At that time he transferred ownership of it to the Steam Tram and Railway Preservation Society at Parramatta. The tram motor is now located at Valley Heights.



As the cities in Australia and New Zealand grew in the 19th century, there was a need for public transportation: people in outlying suburbs needed to get to work more quickly than walking. Horse-drawn omnibuses were introduced by private operators but the need was for something more expansive. In Britain and America tramways were quite widespread by the 1860s and it was only a matter of time before this transport mode was extended to the colonies. In Sydney, the first horse-drawn tram connected Circular Quay on the harbour with the railway station at Redfern in 1861. Although this was dismantled five years later, the die had been cast with tramways being the answer the city planners were seeking.

Although quite a few systems commenced with horse-drawn vehicles, steam motors became common at the front of a tram.

The book starts with an overview of the use of steam trams in Australia and New Zealand as well as a background to their use overseas, particularly in the UK, France and the USA.

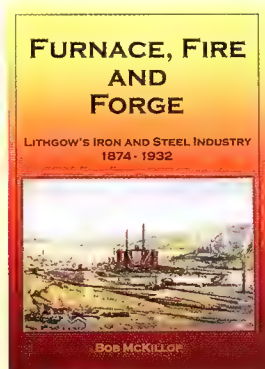
The various systems in Australia are then covered in varying details depending on the extent of their use. In Queensland there were trams in Belmont in Brisbane and also the famous Purrey cars in Rockhampton. In NSW there were very extensive systems in Sydney and Newcastle and these are appropriately covered in some detail. The other systems in NSW (Broken Hill, Maitland, and Toronto), Victoria (Bendigo and Sorrento), South Australia (Adelaide, Glenelg and Port Adelaide) and in Western Australia (Leonora) are well covered. The use of steam trams in New Zealand is also covered with a wide variety of uses and locations.

The appendices to the book include details of the builders of the locomotives and specification sheets of many Baldwin-built examples. Also, the numbering and disposal of the NSW fleet is given a comprehensive coverage.

In the section titled "the afterlife of steam motors" the various uses and conversions are examined. Some of the uses included as shunters at collieries, quarries, and on breakwater construction. One ended up at Marrawah in Tasmania and another at Cave Hill in Victoria, however, the majority were sold as scrap or the boilers were used as stationary engines.

References to the sources of information are limited to usually one general source per chapter so some effort will be required from anyone pursuing further specific information. This book is recommended to those interested in steam trams on urban passenger transport, but will also be of interest to those wanting to know more about the ultimate industrial uses of these fascinating locomotives, although their full, complicated, history is beyond the scope of this volume.

Richard Warwick



Furnace, Fire and Forge

Lithgow's Iron and Steel Industry 1874 - 1932

by Bob McKillop

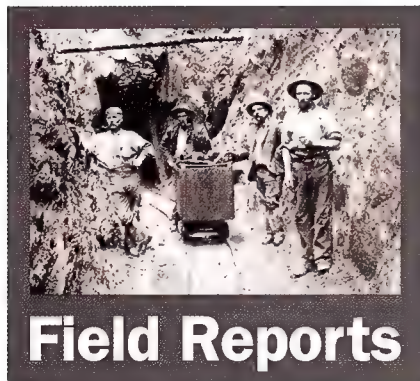
The story of Australia's first and only inland heavy industrial centre, from its beginnings with the opening of New South Wales' Great Western Railway into the Lithgow Valley in 1869 and the establishment of the first blast furnace there in 1874, to the final closure of the iron and steel works in 1932. It covers the technical, commercial, industrial, social and political history of the operation.

G. & C. Hoskins and its predecessors used twenty locomotives at Lithgow steel works and associated plants. The works railways, and those of the limestone quarries, iron ore mines, and collieries which supplied the raw materials, are described and illustrated in the book.

320 pages, hard cover, A4 size, over 250 photographs, 80 maps, plans and diagrams

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Andersons Tunnel and Incline, Glen Davis NSW

Gauge unknown

The Commonwealth Oil Corporation (COC) was formed in London in December 1905, with the aim of tapping into the rich shale resources of the Capertee Valley.¹ In order to reduce the cost of hauling shale and oil over the New South Wales Railways, the company established its retorts and refinery in the Wolgan Valley to the south of the Capertee Valley.² Two tunnels were started simultaneously in the Capertee and Wolgan Valleys, with the aim of linking them to provide a transport route between the two valleys.³ In July 1905, prior to the formation of the COC, work had commenced in the Capertee Valley under the supervision of George Anderson.⁴ Anderson had extensive experience in the mining industry having been granted his first-class Certificate of Competency as a mine manager in England in June 1873,⁵ and he had previously been the manager of the New Hartley shale mine at nearby Airly.⁶ Therefore the tunnel, initially known as the Main Tunnel, would also become known as Anderson's Tunnel.⁷ The tunnel entrance was 500 feet above the valley's floor:

The ascent is so steep that a tramway has been made up the side of the mountain, and the miner simply sits on top of the skips and in a minute or two are at the top of the incline, and have simply to walk round the corner and the mouth of the tunnel is reached.⁸

In January 1906, the operations in the Capertee Valley were described as:

... 'a complete up-to-date electrical installation has been put down, and sufficient power to work two heading machines or coal cutters. A tunnel has been started on the Capertee Valley side, and a coal cutter has been fitted up for undercutting the shale seams, and electrical drilling machines are being introduced so as to facilitate operations, and shot firing will also be done by electricity. A powerful fan has been erected for the purpose of driving fresh air through tubes of large diameter into the working faces. [...] An electric pump was fitted up on the Capertee River for the purpose of supplying the steam boiler with water.'⁹

The coal cutter was described as 'a Jeffrey electric heading machine'¹⁰ and it 'holes for 5 ft 6 in, the electric drill then gets to work and drills three or

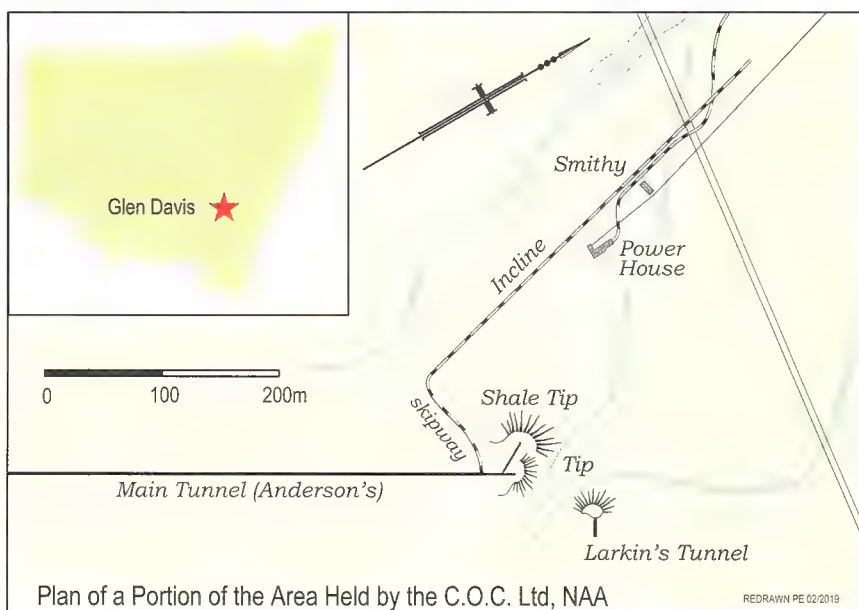
four holes, and the material is shot down.'¹¹ At its peak, 60 men were employed at the mine¹² working three shifts a day.¹³

In September 1906, both the Wolgan and Capertee Valley shale mines were abandoned,¹⁴ in the case of Anderson's Tunnel it was because the shale seam had reduced to eight inches in thickness and it was intersected by ironstone bands, making tunneling increasingly difficult.¹⁵ At the time of its closure, the tunnel had been driven 2,940 feet into the mountain.¹⁶ After Anderson's Tunnel was abandoned, a new mine was started in the Mining Permit 1 (MP1) area of the Capertee Valley, 90 chains to the east of Anderson's Tunnel.¹⁷ The MP1 Tunnel was also subsequently abandoned, but when National Oil Pty Ltd (NOP) commenced operations in

the Capertee Valley in 1938, the MP1 Tunnel was used to supply the shale for this new enterprise.¹⁸

In 1933, when the Newnes Investigation Committee explored the abandoned shale mines in the Capertee Valley, it was stated that Anderson's Tunnel was 'in such a dangerous condition at and near the entrance that inspection of the seam has not been attempted.'¹⁹

The search for Anderson's Tunnel began in the National Archives of Australia in Sydney, where a handful of original COC drawings are buried amongst scores of NOP drawings. Fortunately, the COC drawings were easy to identify as they were on linen, while the NOP drawings were paper blueprints. One of the drawings showed the mine and the nearby property boundaries.



Reproduction of 'Plan of a Portion of the Area Held by the COC Ltd.' This drawing, held by the National Archives, appears to have been created by the National Oil Pty. Ltd., and this is the only detailed drawing of the mine and incline that I have been able to discover. For a wider context see Langdon, M. (2017). *Shale and Shays: The Fight for Shale Oil from the Wolgan Valley*, Everleigh Press, page 10.



The route of the skipway that joins the mine to the incline, looking through the cutting towards the mine.
Photo: Mark Langdon



The 'ramp' near the top of the incline. The skipway to the mine is 20 metres to the right of the ramp. The ramp demonstrates how bush rock was used to create retaining walls. Over 112 years since the mine was abandoned, all the retaining walls are still in good condition. Photo: Mark Langdon



A Jeffery electric heading machine was used in the mine. On a level area next to the incline is this cutting chain. This was most likely the site of the smithy shown on the plan, and the chain was probably brought to the smithy for sharpening or repair and then abandoned when the mine closed. Photo: Mark Langdon

The 1:25,000 topographic map for the area also showed these boundaries, and I was able to plot an approximate location of the mine site onto the topographic map. A prominent feature in the Glen Davis area is the water reservoir, and I calculated a compass bearing between the reservoir and the mine site. Fortunately, my bush surveying worked and walking along the compass bearing took me to the shale tip near the tunnel entrance.

The entrance to Anderson's Tunnel is located in a small re-entrant, but it is no longer visible as water flowing down the re-entrant appears to have washed soil and rocks down the slope and buried the entrance. The skipway between the mine and the incline is on a shelf and it is 80 metres long and curves through a cutting. Beside the skipway and near the incline, is a level area 10.5 metres by 6 metres, that has been created by building a bush rock retaining wall 2 metres high and filling the area between the skipway and retaining wall. The use of bush rock to create retaining walls is a notable feature of the mine site and the incline. The incline starts 20 metres above the skipway, but there is no sign of any foundations for a winding engine at the top of the incline.

The incline is approximately 340 metres long and, 200 metres from the top of the incline, the gradient changes, and the last 140 metres is less steep. Using antiquated technology (a barometric altimeter), the gradient on the top section of the incline is approximately 1 in 3, while the bottom section has a gradient of approximately 1 in 7.

Below the skipway shelf is a natural level area and a bush rock 'ramp' has been constructed that extends the incline partway across this level area. There is a gap of approximately 20 metres between the end of this ramp and the skipway shelf. There is no sign of any timberwork in this area to explain how this gap was bridged, but a pile of bush rock may indicate where there was once a central pier in this gap. Where the incline crosses the creek shown on the plan, there are bush rock 'abutments' on either side of the creek. The southern (or top) abutment is intact, but the northern abutment has partially collapsed. Again, there is no sign of any surviving timberwork in this area. Along the length of the incline are a number of low bush rock retaining walls, the longest of which is 27 metres long.

The only remaining artefacts are a length of 'Barlow' type skip rail near the ramp. This rail has a head width of 25 mm, a foot 75 mm across and a height of 31 mm. When I first visited the site the rail was on top of the ramp, but on my second visit it was beside the ramp. At the site of smithy was a cutting chain.

Mark Langdon 02/2019

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Carnarvon Tramway, WA. Gauge 1067mm

The jetty at Carnarvon (on the mid-north coast of Western Australia) was completed in 1899 and initially had a tramway laid to the gauge of 2 ft. In 1908 the tramway was re-laid in heavier rails and the gauge changed to 3 ft 6 in. In 1909 an 0-4-OST Baldwin *Kia Ora* (7111 of 1884?) was obtained to work the line. This was later replaced by 0-4-OT Andrew Barclay *Kimberley*



Timber bridge remnants on Whitlock Island in 2019. Photo: Sam Laybutt

(1754 of 1922) and *Gascoyne* (1755 of 1922), and the tramway finished its working life with a number of internal-combustion locomotives. All apart from the jetty section was closed in 1965, and had been pulled up by 1974. *Kimberley* has been preserved in working order, but seems unlikely to have turned a wheel for several years. (See *Light Railways* 50 and 56 for further details).

I went for a walk along the Carnarvon Tramway Trail last week and spotted some remains of what looks like an earlier timber bridge on Whitlock Island, just to the west of the main bridge. (See accompanying photograph and diagram).

The August 1999 *ARHS Bulletin* reported that:

Flooding of the river had caused many problems over the years for the tramway operations. So, in 1934 when the tramway embankments were again damaged by flooding, a 34-chain deviation was built and the long culvert bridge (i.e., over Whitlock/Oyster Creek) extended by two bays. This also resulted in two of the small culvert bridges being bypassed and thus being redundant, have deteriorated so that only piles and some cross beams remain in 1995."

The yellow line on the diagram denotes a possible earlier alignment for the tramway across the mud flats, possibly the route bypassed by the 1934 deviation.

Sam Laybutt, 03/2019



Google Earth image showing the location of the bridge remnants and the possible former route of the tramway.

Image prepared by Sam Laybutt.



Heritage & Tourist NEWS

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NEW SOUTH WALES

PETE'S HOBBY RAILWAY, Junee

610 mm gauge

A trial steaming of the operating steam locomotive, Hunslet 1187/1915 *Torpedo*, on Thursday, 21 February, following the fitting of a repaired steam turret, disclosed a second hairline crack developing, with steam blowing through at 80 psi. The fire was immediately dropped.

Following discussions with the Boiler Inspector and other experts, and because of the age of the cast iron turret, the decision has been made to construct a replacement turret. A plan has already been prepared for the approval of the Boiler Inspector. Obviously, until completed, the Hunslet will be out of service.

Progress Report 51, Pete's Hobby Railway March 2019

VICTORIA

ALEXANDRA TIMBER TRAMWAY AND MUSEUM

610 mm gauge

There have been some changes to the locomotive collection at the Alexandra Timber Tramway. On Saturday 13 April the British Electric Vehicles (BEV) 4wBE loco ex Smithfield Munitions Depot, SA, arrived at Alexandra. The 1941-built loco is complete except for the battery box and batteries, with motor, gearbox, controller and brakes still in good condition. The loco rolled easily into position on undercover storage tracks. As yet, no numbers have been discovered to indicate the identity of the loco (one of chassis numbers 2216, 2217, 2230 and 2231).

On the same day the major components of Motor Rail Simplex 4wDM 7351 of 1938 (ex Cheetham Salt Laverton – see LR263) left Alexandra for Ballarat. The engine from this locomotive was donated many years ago to Simplex 4wDM 10058 of 1948 (owned by Peter Evans and operational at Alexandra, where it is used for

shunting and works trains), so what remains of 7351 are just the frame, wheelsets, coupler weights and gearbox. Alexandra already has an example of this model Simplex in 4wDM 20560 of 1955 (ex NSW Maritime Services Board, Paul Simpson and Ray Graf). Peter Evans has sold Simplex 7351 to Sovereign Hill, where the frame is to be authentically restored as a 'Simplex', and a vertical boiler and steam engine added to make a 'Steamplex' (as running at the Groudle Glen Railway on the Isle of Man, UK – see <https://www.youtube.com/watch?v=zQ1fjROGdPE>). Sovereign Hill has the facilities, money and expertise to restore the frame and running gear and add a boiler and engine, and the locomotive will be used to haul trucks to bring wood from

an extended wood yard to the boiler house. Currently, all trucks are pushed by hand, and a minimum of four trucks of wood are required every day.

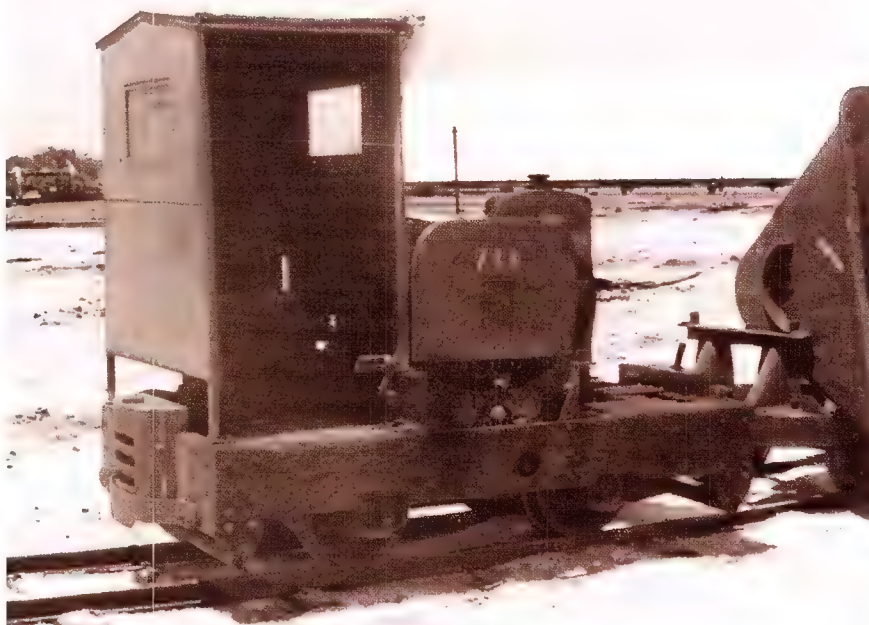
Gangers trolley SEC2 (Ex Victorian Railways and Bogong Creek raceline tramway, now 610 mm gauge) was sold to ATT Vice-President Stefan Rebgetz on 14 April as Peter Evans further rationalises his collection. SEC2 will remain at Alexandra.

Peter Evans 04/2019

KERRISDALE MOUNTAIN RAILWAY

Gauge 610mm

The Kerrisdale Mountain Railway's new-build steam locomotive *Douglas* is nearing completion.



Motor Rail 'Simplex' 7351 of 1938 when at Cheetham Salt's Laverton Works. When purchased in 1987 it was in a very derelict condition and had a 44-gallon drum as a radiator. Photo: Geoff Baxter



The wood yard serving the boiler house at Sovereign Hill, Ballarat, in January 2012. The track is laid to 610mm gauge, and the current trucks use wheelsets from the Bundaberg Foundry (formerly used on cane wagons). When restored, Simplex 7351 will be used to haul these trucks between an extended wood yard and the boiler house. Photographer unknown

Some details of the locomotive are:

- Gauge: 610mm, for a ruling gradient of 1 in 12.5
- Wheel arrangement: 0-4-0WT, geared 2.25 to 1
- Tractive effort: 5062 lbs
- Adhesive force: 3608 lbs @ 0.8 factor of TE to AF = 4.53:1
- Boiler: Classic locomotive boiler of welded construction designed to AS 1228 to 200 psi, working pressure 150 psi, burning wood, 65 horsepower
- Special features: Extended front end, Lempor exhaust adapted to the Riggensbach system. Rocking grate with rosebud vortex primary air entry, affording great fluidity to the fire bed whilst assisting in clean combustion
- Braking: Steam sled brakes, transmission contracting band acting on all four wheels, and Riggensbach counter-pressure.

The track at Kerrisdale Mountain Railway is laid in 20 lb/yd rails and is designed for an axle loading of 4.5 tons. The boiler and engine of the new locomotive have been tested in steam, and the next task is to disassemble the locomotive for painting.

Andrew Forbes per Peter Evans 04/2019

WALHALLA GOLDFIELDS RAILWAY, Walhalla 762 mm gauge

The 10 Class loco has soldiered on over the busy period with only a minor hitch, with the Fowler being out of action for an overhaul of the Torque Converter. A more robust compressor was installed on the Class 10 and wired into the control console in the driving cab.

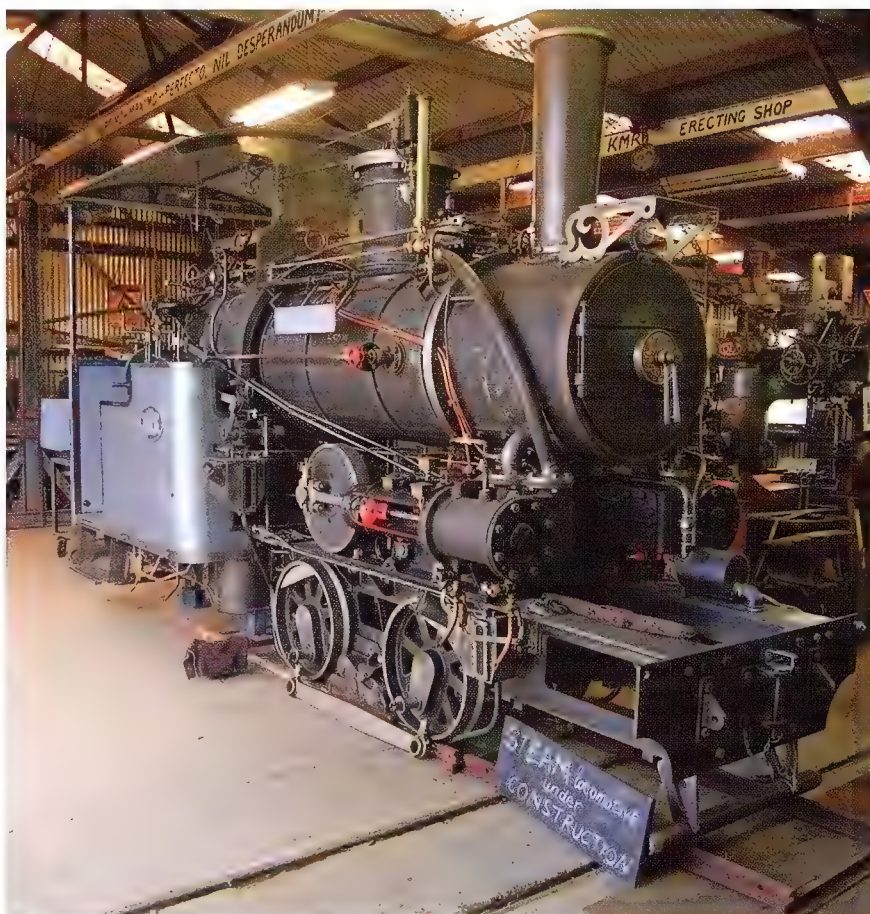
On the DH locomotives, some minor on-site works will need to be carried out on the underframes to create clearance during turns and for the fitting of the standard narrow gauge $\frac{3}{4}$ sized coupling equipment. The company which cast the wheel-hubs for the rail motor presently manufactures this equipment for the Puffing Billy Railway and is happy to supply WGR, with PBR's permission, to use its patterns.

Hardchrome Engineering was the successful tenderer for construction of the rail motor underframe, and production is under way. This company has pressed the wheels off the tram axles and has now received drawings from ADRA Multidiscipline Engineering Group, Traralgon, to enable the modification, re-gauging and assembly of the wheelsets as driving axles for hydraulic drive units. New wheel-hubs cast by IXL in Geelong and wheel-rims from Puffing Billy have been retrieved and delivered to Hardchrome for assembly. Bogie completion will occur prior to completion of the underframe and the underframe will be mounted on the bogies once all under floor equipment has been fitted.

A risk analysis is under way in preparation for a possible visit of the Climax locomotive from Puffing Billy later this year. A further risk analysis is also being prepared to allow WGR rail trolleys to be operated as a trolley train in the future, similar to those presently operated to such great financial advantage by the Daylesford Spa Country Railway.

The Fowler locomotive No.14 is one of several locomotives used by the Walhalla Goldfields Railway and has been a workhorse since 1993 for the WGR, but through age and wear and tear has suffered a number of mechanical failures which has put it out of operation. The locomotive has a long history within the local region, commencing operation when purchased in 1954 by the State Electricity Commission of Victoria for general purpose duties in the local power industry, before being donated to the WGR in 1993 prior to the

impending closure of the interconnecting railway between Yallourn and Morwell. In 1951 the SEC purchased two 2 ft 11½ inch gauge (900 mm) 150 BHP Fowler diesel locomotives numbers 12 and 13 and a further locomotive No.14 of the same description in 1954. Two of the locomotives were used in the Morwell open cut and one in the Yallourn open cut. All were used as all-purpose non-electric locomotives. With the impending closure of its Inter-Connecting Railway, the SEC donated No.14 to the WGR, re-gauged to 2 ft 6 inch



Douglas photographed in the erecting shop at the Kerrisdale Mountain Railway on 16 April 2019.

Photo: Peter Evans

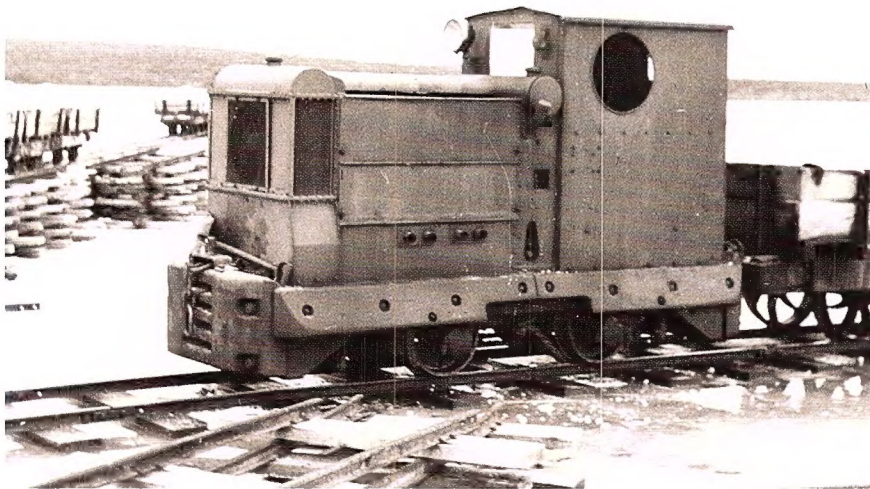


Former South African Railways NGG16 129 built by Beyer Peacock in 1950 currently being rebuilt and re-gauged in the Puffing Billy workshops at Belgrave.

Photo Graeme Daniel



Perry Engineering number 271 of 1927 Klondyke, aka Thomas, being lit up in preparation for a Day out with Thomas event on the Bellarine Railway at Lagers Siding on 13 April 2019. Photo: Lindsay Bamford



Locomotive Ruston at the Waratah Gypsum Company salt and gypsum harvesting works at Stenhouse Bay at the south end of the Yorke Peninsula on 23 January 1947. Photo: Arnold Lockyer



Restored locomotive Ruston at the Light Railway Museum at Milang on 12 February 2019. Photo: Peter Lucas

in the SEC Workshops; also donated were sixteen 33 ton coal wagons. WGR acquired these items in 1993. The locomotive was fitted with train brakes, side engine compartment covers and was re-painted in the VR's 1915 locomotive colours of Canadian red, brown and black with white lining. Since then No. 14 has been the mainstay of the WGR fleet of locomotives. Parts for this locomotive have become increasingly rare and often need to be manufactured. In order to provide reliable operation of the railway, major maintenance work on the Fowler was urgent.

Recently Walhalla and the surrounding area were hit by a bush fire limiting access to the railway with the road closed for some time. With the down-turn in visits due to fires and the ongoing cancellation of services, WGR's ability to have much needed work completed on No.14 was affected. To overcome this, on 6 March the Railway launched a crowdfunding campaign on their Facebook Group through pozible.com. The aim was to raise \$10,000. Through the Facebook "share" process the campaign was also publicised on other Facebook pages. Three weeks later the campaign was successfully completed with \$10,710 being raised from 41 donors. Work on the Fowler has now been completed and it is running again.

Dogspikes and Diesel, February 2019; Walhalla Goldfields Railway Facebook Group; Frank Stamford

SOUTH AUSTRALIA

MILANG RAILWAY MUSEUM, Milang

610 and 1610 mm gauges

Tuesday, 1 February was a big day at the Milang Railway Museum with the volunteers running a heritage diesel locomotive under its own power for the first time in 48 years. It was the culmination of work on the locomotive which arrived on loan from the National Railway Museum, Port Adelaide in April 2017. *Ruston* was built in the first half of 1938 by Ruston & Hornsby Ltd. of Lincoln in England. It was a member of that company's Class 44/48 and its builder's number is 187078. The engine is a 48 HP 4VRO number 392572, which replaced the original engine in 1956. The track gauge is two feet and it has a chain drive with three gears. It was shipped to Ruston & Hornsby (Australia) in Melbourne on 5 July 1938 at the second attempt. The first time it was shipped the locomotive was dropped at the docks in London and had to be returned to Lincoln for repairs. *Ruston* was purchased by the Waratah Gypsum Company and was employed at its salt and gypsum harvesting operation at Stenhouse Bay in the far south of the Yorke Peninsula. By 1969, the Company had applied numbers to its fleet of locomotives and *Ruston* became number 304.

By 1971, operations at Stenhouse Bay had ceased and *Ruston* was donated to the Mile End Railway Museum, the predecessor of today's National Railway Museum (NRM). It then remained in storage at several locations for the next 46 years.

Restoring *Ruston* to running condition was no easy task. Long before it left the Yorke Peninsula, the locomotive was stripped of all its electrics and was hand started each day. Half a century later this was no longer an option. The first problem was to locate a 1938 Ruston starter motor. After much searching on the Internet and many phone calls, one was located in a derelict locomotive at Broken Hill and the volunteers were given permission to remove it. Five months later the engine was run for the first time.

Attention then moved to the rest of the locomotive; restoring operation to parts which had not moved for half a century. Single nuts sometimes took three hours to undo with plenty of colourful language. At the same time, *Ruston* was painted and lined. The chain drive was finally attached and the locomotive moved under its own power for the first time in 48 years.

There is still work to do with alignments to be completed, brakes to be adjusted and many other minor tasks. There is also some work on the track before *Ruston* will be seen regularly stretching its legs on the Milang two foot gauge track.

Progress has been made on the accreditation to run the BEV (Battery Electric Vehicle) at Milang, subject to the provision of a dead-man's handle and a low speed limit. One Smithfield munitions wagon is to be fitted with seats for four passengers. It will run to the turntable and back on Sundays if accredited drivers can be found, and an extension of the track is planned.

The inside south-east wall of the Light Rail Centre is to be used to tell the story of steam on light railways. A steam loco cab loosely based on a Decauville's is being developed as a driving simulation, and storyboards on these and other steam locomotives used in SA will be installed, including one which will explain how a steam locomotive works. There will be equipment for displaying videos of light rail steam, including SA instances if they can be found.

Press release from Milang Railway Museum 21/2/2019; LRRSA SA Group minutes for February 2019 and April 2019

COBDOGLA IRRIGATION AND STEAM MUSEUM, Cobdogla

610 mm gauge.

Since the last report, workers have removed one of the redundant points sets which led to the original position of the turntable at Mudge's Loop, and realigned and rebuilt the main line heading south. The second set of points at the channel bank end of the former Mudge's Loop will be realigned at a later date. A number of sleepers were replaced during the exercise.

Following the Bagnall's boiler inspection, the section of plate containing the fusible plug was cut out and replaced with a socket. This was done as a result of wastage of the plate around the fusible plug hole to below the minimum of four threads.

At the same time the regulator housing was machined and the slide valve was machined and lapped. Access for this job was somewhat difficult due to the small size of the dome. However, with the regulator fully closed, there is

a leak in the system somewhere, which workers suspect may be in the internal section of the steam pipe to the cylinders. This problem is still to be further investigated.

New bearings for both wheel connecting rods are currently being fabricated which should remove the persistent knock in the motion. During this down time for the Bagnall, the two Simplex locos maintained the railway services. Visitor numbers were good during the summer twilight train season in January, which, along with several charter trains, has given a reasonable return for the effort involved.

Work on the Humphrey Pump is virtually complete and there have been a number of successful trial and training runs. Work over the last two years has included a complete revamp of the ventilation system, the installation of a gas monitoring system and the building of a new top section of one of the gas producers and the reconditioning of the other one. This has been a tremendous effort for the small band of Humphrey workers. However, another obstacle has been presented in the form of an engineer's report on the condition of the building in which the pump is housed. There are several areas of concern in the form of concrete cancer, and a ban has been put in place regarding further running of the pump until repairs have been completed. SA Water have not set a time scale for these repairs, so members still do not know when the pump will run again for the public. This is very disappointing for the team which has worked hard to get the pump running again after a gap of six years or so.

Denis Wasley, Cobdogla Steam friends Society Inc, February 2019

NATIONAL RAILWAY MUSEUM, Port Adelaide

610, 1067, 1437 and 1610 mm gauges.

The National Railway Museum announced a very special birthday event when steam locomotive

Peronne celebrates its 100th birthday during the weekend of Saturday and Sunday 27 and 28 April. As one of the oldest operational steam locomotives still in service in Australia today, *Peronne* will take pride of place taking visitors for rides at the Port Adelaide site. *Peronne* was built by Andrew Barclay locomotive builders in Scotland for new smelters located at Port Pirie, but its construction was delayed due to World War I raging in Europe at the time. *Peronne* was not commissioned until 1919, after the end of that War, and it was finally shipped to Australia to work at the Broken Hill Associated Smelters at Port Pirie, where it remained in faithful service until 1964. "The fight at Peronne had included battalions from every Australian state. British Commander General Lord Rawlinson remarked that this feat by the Australian troops under Monash's command was the greatest of the war." [AWME 03183] The name *Peronne* was bestowed on it after the huge efforts made by Australian soldiers with their successful defence of the small village of Peronne, in France. Eventually *Peronne* was saved from being scrapped, and it arrived at the NRM in February 1966, to become a wonderful exhibit. It was fully restored by volunteers and re-entered service at Port Adelaide in December 1988. In conjunction with annual ANZAC commemorative events, the railway museum believes that *Peronne's* connection to World War I and the fact that it is turning 100 years old, deserves a genuine celebration. NRM Executive Officer Bob Sampson said, "We are so pleased to have this magnificent steam engine, maintained in operational condition, as part of our huge collection at Port Adelaide today." "Visitors will be able to experience a ride behind the locomotive over the two days of our special birthday celebration weekend – especially with all children under 15 years of age riding at no cost" he said.

National Railway Museum online post, 14 March



Section of re-aligned track at Mudge's Loop on the Cobdogla Irrigation and Steam Museum railway. The loop has been rebuilt.
Photo: Denis Wasley



The Mount Lyell Mining and Railway Company Limited operated the 3 ft 6 in gauge railway between Queenstown and Strahan until its closure in 1963. The railway included sections of rack using the Abt system and the section between Queenstown and Regatta Point has been restored and operated as a tourist railway. On 29 January 1963 the well respected rail historian and photographer Weston Langford visited the railway to record its last days and take these photographs. The top one shows locomotive No 1 at the loco shed in Queenstown all steamed up and ready to go. The middle shot shows loco 4 with a rake of 4 trucks leaving the Halls Creek Quarry siding and heading back onto the main line. The bottom shot shows locos 3 and 4 at the Regatta Point terminus with No 4 on the turntable in the background. All photos by Weston Langford. [www.westonlangford.com/images/photo/102493,102512 and 102552](http://www.westonlangford.com/images/photo/102493,102512%20and%20102552).

Ross Mainwaring has written a new book titled *Beneath the Peak of Lyell* and covers all of the railways and tramways associated with the mines. The manuscript is almost complete and the LRRSA will publish the book in due course.





The Maylands Brickworks was located on a bend of the Swan River only four kilometres from the centre of Perth. The works had a 2 ft gauge tramway system that carted clay from the pits around the site to the kilns. The tram system operated with two 4 wheel Planet type Y locomotives for many years. The ARHS conducted a tour of the works on 19 March 1963 and these two photos were taken by the late Weston Langford who was part of the tour. Both photos Weston Langford collection www.westonlangford.com/images/photo/107233 and 107242

